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The Pennsylvania State College

The Graduate School

Department of Rural Education

THE DEVELOPMENT AND SIGNIFICANCE OF THE VOCATIONAL INTERESTS
OF RURAL HIGH SCHOOL PUPILS IN PENNSYLVANIA

A Thesis

by

Glenn Zebulon Stevens

Submitted in partial fulfillment

for the degree of

Master of Science

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Approved:

June 5, 1935

C. J. Anderson

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June 5, 1935

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BIOGRAPHICAL SKETCH OF THE WRITER

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THE DEVELOPMENT AND SIGNIFICANCE OF THE VOCATIONAL INTERESTS
OF RURAL HIGH SCHOOL PUPILS IN PENNSYLVANIA

CHAPTER I

Introduction

STATEMENT OF THE PROBLEM

This study had its origin in the desire to discover the representative nature of the vocational interests of rural high school pupils in Pennsylvania, and to test the validity and reliability of expressed interest preferences. Various conclusions concerning the permanence and rationality of the subjective estimates of interests by urban high school pupils have been drawn from data collected directly and from recall by college students.¹ The main difference in the attack of the problem in this analysis of rural children attending high schools where vocational agriculture and home-making are offered has been the use of a uniform survey of a large group followed through four consecutive school years.

Specifically, the problem is (1) to trace the development of group interests of rural secondary school children, for possible use in educational planning, and (2) to discover the valid extent of the use of individual interest estimates in vocational guidance. Attention has been given to some factors which may limit an entirely free and sound expression of vocational interests.

¹ See Bibliography, references 2, 3, 7, and 9.

THE NATURE OF INTERESTS

A major limitation of early studies in the measurement of interests as one of the most important aspects of human personality was that they were not easily separated from abilities, from motivation, and from the influence of variations in amount and kinds of stimulation; a difficulty which still persists.

The conception of what interests are has gradually evolved from the early Greek recognition of variation in individuals in the choice of activities giving greatest happiness and welfare, through the nineteenth century development of the "doctrine of interest," to the present emphasis on defining interests through their measurement. The subjective measurement of interest is the process of recording degrees of likes, dislikes, or indifference of feeling experienced within a field of stimulation. It is, then, not possible to measure the potential interest an individual may develop in any field of endeavor until he has had the opportunity to experience the elements of that activity.

It will be recognized that the data used in this study are subjective interests, which are to be distinguished from the yet relatively undeveloped technique of objective measurement.

"Objective interests may be regarded as knowledge or information of a superficial sort, extending widely over a well-defined field of activity, which may be taken to indicate a tendency of the individual to react to stimuli in that field of stimulation."²

Information tests of knowledge in specialized fields and

² Fryer, Douglass. *The Measurement of Interests*. New York: Henry Holt and Company. 1931. Page 346.

free association tests calculated to show trends in preferred activities are attempts at objective measurement, as compared to the subjective inventory of preferences and aversions.

The ability to become interested is a characteristic peculiar to every individual. When, in the scoring of an interest inventory, such as employed in this problem, the members of a group of people - a social, age, or occupational group - show a commonness of likes and dislikes it is possible to establish a degree of group interest. In so far as such similar reaction tendencies are possessed by all people, the measure is of the universality of interest.

This study of rural boys and girls lends itself to subdivision into occupational, sex, ability, and age groups for the determination of distinctive vocational, educational, work, and recreational interests. The results are valid only to the extent (1) that the groups can be separated, and (2) that the items inventoried are expressions of a special interest.

RELATION TO ABILITIES AND OPPORTUNITIES

One of the conclusions of any study of interest must be that it is but one of the factors which enter into the identity of the individual and which exert an influence upon the efficiency and direction of his reaction to environmental stimuli. In the vocational guidance of youth, inherent general and special abilities rank with interests in importance as the adjustments to occupational opportunities are intelligently planned.

The development of the vocational interests of the rural high school pupils who comprise this analysis may answer the question whether certain vocational interests do or do not reliably indicate high or low

general ability, but it is much more difficult to ascertain the extent to which the individual has been guided in his vocational choice by previous success or failure estimates of his own ability.

SOURCES OF DATA

In order that the results might be truly representative of Pennsylvania rural high schools where vocational agriculture and home-making are taught, an invitation to participate in the study was extended to each principal or director in the state whose entering freshman class in September 1929 numbered less than 75. Forty-one schools signified their willingness to cooperate, and began supplying the information. Thirty-six of these, located in 29 of the 67 counties,³ completed records for a part or all of the pupils for the four years that the entering freshman class of 1929 was in high school.

Of the 1,242 boys and girls who answered the first survey form in September 1929, completed four-year records were obtained for 345 boys and 359 girls. There were 126 boys and 154 girls who were eliminated after starting ninth grade but before the twelfth grade for whom fairly complete information was recorded.

The two groups mentioned above, together with 128 pupils who moved from the district during the four-year period, constitute 89.4 per cent of those with which the study began. Table I shows the summary of the classification of pupils and the reasons why the records were or were not completed.

METHODS OF STUDY

A vocational interest questionnaire was submitted to each boy

³ List of schools cooperating in this study with number of pupil records from each, Appendix, page 67.

and girl entering ninth grade in September 1929 in the 36 schools, and another copy of the same form was answered by this group of pupils in May 1930, September 1930, May 1931, September 1931, May 1932, and during the Senior year only once, in December 1922. The survey forms were returned to the College immediately each time and the information transferred to permanent record cards which became the accumulated individual interest history.⁴

TABLE I

Classification of Pupils With Which the Study Began

Boys who were graduated	345	
Girls who were graduated	359	
Boys who were eliminated	126	
Girls who were eliminated	154	
Total usable records		984
Pupils who moved from the district	128	
Completed for six surveys only	51	
Completed for less than six surveys	27	
Pupils who missed surveys 2 and 3 and not included later	31	
Records not having an I. Q. score	21	
Total unusable records		258
Total records		1,242

At the time of the first survey in September 1929, the Otis Group Intelligence Test, Advanced Examination Form B, was administered. This test was chosen because it was the one that the majority of principals had selected. The intelligence quotients of the 704 boys and girls who were graduated ranged from 128 to 65. The mean I. Q., as

⁴ Copies of the questionnaire and record forms are included in the Appendix, pages 63, 64, 65, and 66.

given in Table II, for the entire group was 94.9; for the boys 94.2, and for the girls 95.9.

TABLE II

Mean I. Q. of Pupils Graduated by Sex and Quartile

Quartile	Boys	Girls	Total
III	110.2	109.7	109.8
II	93.6	94.4	94.0
I	80.6	81.5	81.0
Total	94.2	95.9	94.9

The closest approximation of a quartile grouping, for the study of the pupils in ability groups, was made by including those having intelligence quotients of from 128 to and including 103 in Q-III, those from 102 to and including 87 in Q-II, and the remainder in Q-I. Inasmuch as the girls show a slightly higher mean, it is to be expected that somewhat more girls than boys are included in Q-III, and conversely, more boys than girls in Q-I. Table III shows the number and percentage of each sex in each quartile.

TABLE III

Quartile Distribution by Intelligence Quotients

Quartile	Number			Per Cent		
	Total	Boys	Girls	Total	Boys	Girls
III	171	80	91	24.3	23.2	25.3
II	373	180	193	53.0	52.2	53.8
I	160	85	75	22.7	24.7	20.9
Total	704	345	359	100.0	100.0	100.0

One other preliminary essential is that a vocational classification be established. Due both to minor variations in the language the pupils used in stating their vocational preference and to the advantages, in studying a large group, of combining choices that require similar qualifications and preparation, it was found expedient to utilize the following occupational groupings: Agriculture, Artists and Entertainers, Aviation, Clerical, Domestic and Personal, Engineer, Lawyer, Mechanical, Music, Nurse, Physical Education and Athletics, Physician, Public Service, Scientific, Teacher, Vocational Teacher, Trade, Transportation and Communication, Other Occupations, and No Choice. The classification is an adaptation of the United States Census groups, enlarged to show separately several occupations which among these boys and girls constitute choices of a particular significance.

The sub-lists under each of the 20 major groups, containing all the variations in expression of a vocational preference made by the 984 boys and girls, may be referred to in the Appendix, pages 69, 70, 71. The group designated as "Other Occupations" includes only those listed, no one of which attracted as many as one per cent of those making a choice at any one survey period.

For the purposes of the analyses made in Chapters II, III, and IV, only the 704 boys and girls who were graduated have been considered. In Chapter V, the 280 pupils for whom a verified record of their elimination from school was obtained are compared with the pupils who completed high school.

CHAPTER II

The Development and Permanence of the Vocational Interests of Pupils Who Were Graduated

DISTRIBUTION OF VOCATIONAL CHOICES

The percentage distribution of boys and girls according to the classification of vocational choices at each of the seven survey periods appears in Table IV.

There are three outstandingly striking facts revealed by these figures. First, the similarity of the proportion of the pupils choosing each occupation at succeeding survey periods; second, the marked sex differences in vocational preference; and third, the large proportion of boys making their choice within four groups and of the girls within three. The total percentage of boys who made a vocational choice of Agriculture, Aviation, Engineer, or Mechanical varies only from 70.5 in May of the freshman year to 62.9 in the senior year. From 77.1 per cent in September of the freshman year to 65.4 per cent in the senior year was the change in total proportion of girls who selected Clerical, Nurse, or Teacher.

When the distribution of choices was separated into the quartile⁵ ability groups, a general similarity continued through the successive survey periods. However, between the 25 per cent having superior ability and the lowest intelligence quartile, there is evident a tendency for more in the upper quartile to choose Teaching, Scientific, and Other Occupations. Correspondingly, more in the lower quartile selected Nursing and Mechanical vocations.

⁵ Appendix, pages 72, 73, 74, 75, 76, and 77.

TABLE IV
Percentage Distribution of Vocational Choices

	Boys						Girls							
	S-29	M-30	S-30	M-31	S-31	M-32	D-32	S-29	M-30	S-30	M-31	S-31	M-32	D-32
Agriculture	19.7	21.5	19.4	22.9	19.3	19.4	20.6	-	.3	-	-	-	-	-
Artists and Entertainers	1.7	1.8	1.2	.9	1.2	.9	1.2	2.5	3.2	3.4	2.1	1.8	3.8	3.4
Aviation	13.9	12.0	13.9	12.7	14.2	15.0	9.9	1.1	1.5	.6	.3	.6	.6	.8
Clerical	2.6	1.2	1.7	1.2	1.5	1.6	1.4	21.2	21.2	18.8	21.0	17.0	16.5	17.3
Domestic and Personal	.9	.9	1.7	.3	.3	.3	.3	1.1	1.2	3.4	3.0	3.2	5.8	7.8
Engineer	12.2	13.5	13.3	12.4	14.8	10.6	11.0	-	-	-	-	-	-	-
Lawyer	2.6	1.5	1.4	.9	.9	1.3	1.7	.3	.3	-	.3	-	-	-
Mechanical	22.6	24.5	21.9	21.7	20.5	19.4	21.4	1.7	2.6	2.8	3.3	2.6	2.9	1.7
Music	1.4	1.2	1.4	2.8	1.8	2.2	1.2	6.4	7.0	5.9	6.8	5.0	3.2	2.5
Nurse	-	-	-	-	-	-	-	26.7	25.9	28.8	26.0	29.8	30.0	27.5
Physical Education	1.4	2.4	1.7	1.6	2.4	2.2	2.9	1.1	2.0	1.7	3.3	2.6	2.2	2.8
Physician	1.4	1.5	1.7	1.2	1.5	.9	1.2	.3	.6	.3	.6	.3	.6	.6
Public Service	2.9	.9	2.0	2.2	1.8	3.4	3.2	.3	-	-	-	-	-	-
Scientific	1.4	1.5	1.7	1.9	.9	2.2	1.4	.3	.3	-	-	-	-	-
Teacher	3.5	3.9	5.5	5.0	5.1	5.0	4.1	-	.3	-	-	-	-	-
Teacher, Vocational	1.2	1.5	.9	1.6	1.2	2.2	2.0	29.2	26.2	24.4	20.7	23.7	19.6	20.6
Trade	4.7	4.2	3.8	4.3	3.6	3.4	3.5	2.5	3.5	3.9	4.7	5.0	3.2	2.5
Transportation and Communication	1.4	1.5	1.2	.9	1.2	1.9	1.7	1.7	1.2	.8	.9	2.0	1.7	2.0
Other Occupations	2.9	2.7	2.6	2.8	4.0	3.4	5.2	.3	.3	.3	-	-	-	-
None	1.4	1.8	2.9	2.8	3.6	4.7	6.1	2.5	1.7	2.8	3.0	2.3	3.5	3.6
Total number of pupils	345	334	345	323	331	320	345	359	344	357	338	342	346	359

The only changes of any size in the total distribution of boys' choices during the high school period, as illustrated in Figure 1, were the decrease to 9.9 per cent preferring Aviation at the last survey and the consistent, though small, increases in those choosing Other Occupations and those who made No Choice. The changes in the last two groups mentioned may be taken as evidence of a broadening of the range of selection and of a greater thought accompanying the expression of a choice.

A downward trend in the number of girls who wanted to be Teachers and a slight decline in the per cent choosing Clerical work continues through the four years of high school. Increases were registered for Domestic and Personal vocations and in the number unwilling to make any choice.

A discussion and explanation of the causes and validity of the observed distribution of vocational choices have been reserved for consideration in Chapter IV.

ANALYSIS OF PERMANENCY

From one survey period to the succeeding survey period, there is no significant difference in the per cent of permanency of boys' vocational choices, either in total or when separated according to ability quartiles (Table V). The same statement holds true of the girls' choices, but one difference must be noted. The average permanency of the boys' choices from September to May and from May to September was 60 per cent, while the girls' average permanency exceeded 66 per cent.

While the girls do show a higher degree of permanency of vocational interests both during the elapsed time of a school year and of successive summer vacations, yet when the vocational choices made in

FIGURE 1

Percentage Distribution of Vocational Choices in Freshman and Senior Years - September 1929 and December 1932

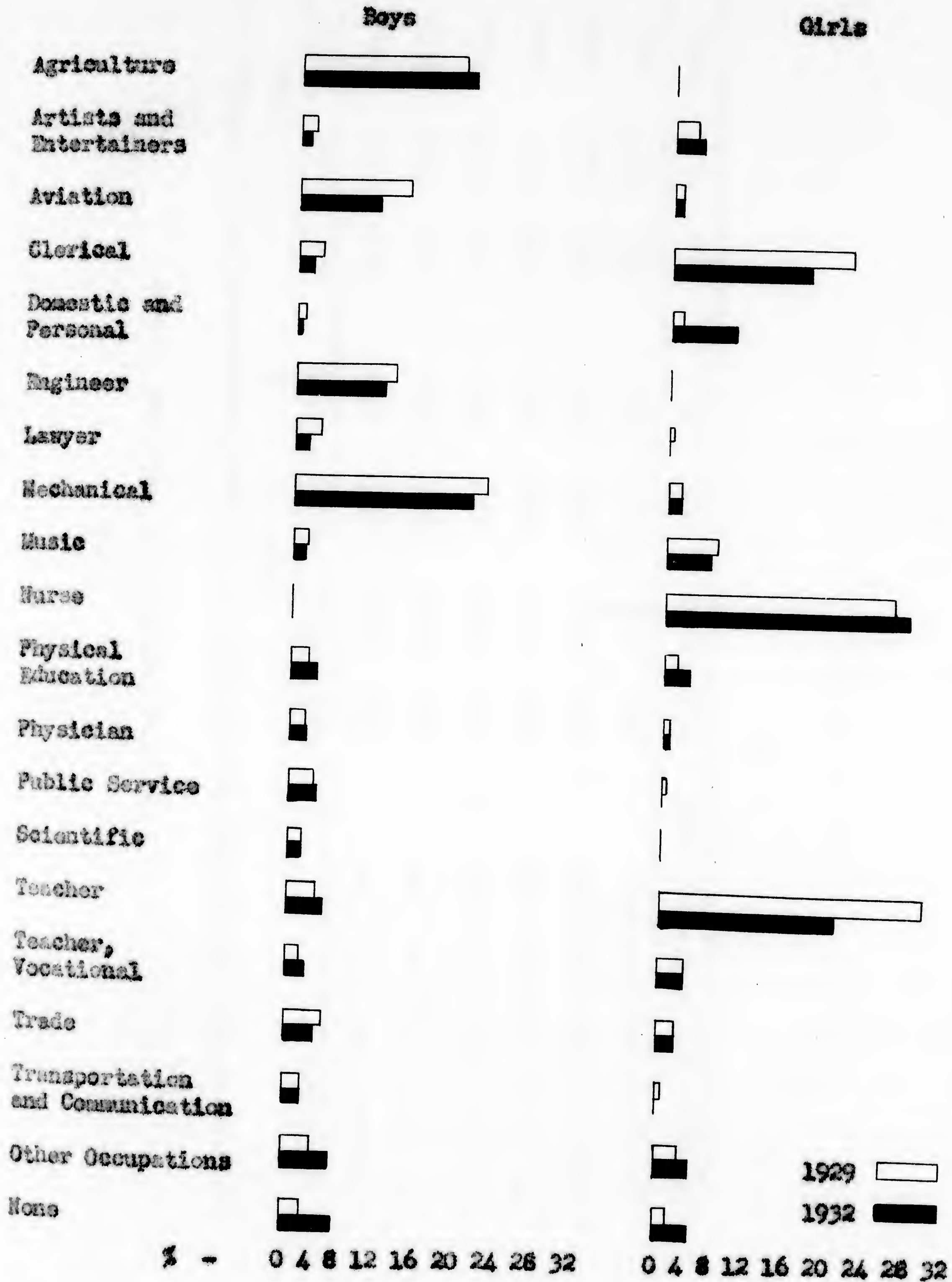


TABLE V

Per Cent Permanency of Vocational Choices

Period	Boys			Girls		
	Q-I	Q-II	Q-III Total	Q-I	Q-II	Q-III Total
September 1929 to May 1930	52.0	61.1	61.0 59.0	63.9	65.0	66.2 66.8
May 1930 to September 1930	63.8	62.2	56.5 61.2	61.1	62.0	70.7 68.0
September 1930 to May 1931	61.4	60.7	55.0 59.4	71.0	70.6	57.4 68.0
May 1931 to September 1931	62.3	61.3	60.5 61.0	72.0	60.1	60.0 63.2
September 1931 to May 1932	63.8	59.9	60.5 61.0	66.0	64.7	55.0 63.0
May 1932 to December 1932	55.0	56.1	55.3 55.6	70.4	67.9	70.7 69.1
September 1929 to December 1932	30.0	40.0	41.2 37.4	45.0	35.7	40.0 39.0

September of the freshman year are compared with the senior year preference, only 39.0 per cent of the girls still select the same vocation compared with 37.4 per cent of the boys. A long-time tendency for a shift in vocational interests, or as it has been termed, a genetic development of interests, is thus revealed which did not appear when the shorter periods were analyzed.

In the next two paragraphs is a complete presentation of the changes in vocational interests during ninth grade (as representative of the short-time development) and the shift in the same choices made upon entering ninth grade until the senior year.

CHANGES DURING NINTH GRADE AND HIGH SCHOOL

By the use of a "scatter diagram,"⁶ Table VI shows in the horizontal rows the number who made each of the vocational choices listed in the left-hand column in September 1929 as they distributed their choices in May 1930. As previous tables showed, the distribution of the total choices made in September, indicated in the column at the right, is very similar to the totals for May 1930, given in the row at the bottom of the table.

The diagonal of squares from the upper left to the lower right-hand corner includes the frequencies of those who made the same choice at both periods. The totals show that 197 of 334 boys made the same choice, while 228 of 343 girls did not change. In percentages, the girls had a permanency of 66.8 per cent as compared with 59.0 per cent for the boys.

The table reveals that the boys choosing Agriculture, Mechanical, and Aviation had a higher than average permanency. With the girls,

⁶ A technique borrowed from Franklin, E. E., "The Permanence of the Vocational Interests of Junior High School Pupils." Johns Hopkins University Studies in Education No. 8. Baltimore: The Johns Hopkins University Press, 1924.

TABLE VI

Changes in Vocational Interests During Ninth Grade

	Agriculture	Artists and Entertainers	Aviation	Clerical	Domestic and Personal	Engineer	Lawyer	Mechanical	Music	Nurse	Physical Education	Physician	Public Service	Scientific	Teacher	Teacher, Vocational	Trade	Transportation and Communication	Other Occupations	None	Absent - May 1930	Total - September 1929
<u>Agriculture</u>	46		1			4		8				1			1		1		2	2		68
<u>Artists and Entertainment</u>		5			1					1					1		4			1		6
<u>Aviation</u>	4	4	28		2	2		6			1						4		1	2		48
<u>Clerical</u>	3	2	3	3	1			1	1	5			1		9		1					9
<u>Domestic and Personal</u>				2	3					1					1		1				4	76
<u>Engineer</u>	3	4	4		23			8				1	1	1	1		1		1			42
<u>Lawyer</u>	1				1	4				1					1		1					9
<u>Mechanical</u>	8	2		1	8			51	2			1	1	2	1				1	2		78
<u>Music</u>		3		2	1	1		1	16	1	1				1					1	5	23

TABLE VI (Continued)

	Agriculture	Artists and Entertainers	Aviation	Clerical	Domestic and Personal	Engineer	Lawyer	Mechanical	Music	Nurse	Physical Education	Physician	Public Service	Scientific	Teacher	Teacher, Vocational	Trade	Transportation and Communication	Other Occupations	None	Absent - May 1930	Total - September 1929		
Nurse		1	1	5	1			1	4	70	1	1			6						5	96		
Physical Education		1									4	4										5	4	
Physician	1											4	1									5	1	
Public Service		1			2	2		2					2	1			1	1	1		1	10	1	
Scientific	1	1					2						1	1								5	-	
Teacher		1		8	1		1	2	1	2	1			1	7	67	2	1	1	1	2	3	12	105
Teacher, Vocational			1	2				1	1							4					1	4	9	
Trade	3				1	1	2	1		1				1	1	7	1	1				16	6	
Transportation and Communication	1	1	1											1		2		3	1			5	1	
Other Occupations		1	1		3		2			1	1							3	3			10	9	
None	1	1													1		1		1			5	4	
Totals - May 1930	72	6	40	4	3	45	5	82	4	8	5	3	5	13	90	5	14	5	9	6	11	345		
	1	11	5	73	4	-	1	9	24	89	7	2	-	1	90	12	4	1	6	4	15	359		

Upper left-hand number in each square = Boys; Lower right-hand number in each square = Girls.

the groups choosing Nursing, Clerical and Music were above average in permanency of choice.

The diagram indicates that boys changing from Agriculture, Mechanical, Aviation, or Engineer tended to choose one of the same group of occupations. Similarly, with the girls, those changing from Clerical, Nursing, or Teaching, tended to select another from the same three.

The diagram used in Table VII is to be compared with the previous table. The first difference noted is that the number of both boys and girls whose choices were identical as freshmen and as seniors is much lower than the number who made no change during ninth grade. There were 129 boys, or 37.4 per cent, and 140 girls, 39.0 per cent, who retained their original ninth grade vocational preference.

Of the boys' choices, those in the original Agriculture, Aviation, and Mechanical groups exhibited above average tendency not to change their choice. The girls who first chose Nursing and Music were above average in their permanency of interests. Explanations as to why these are the above average groups in percentage permanency may be a matter of most common association for the boys and of special fitness and actual experiencing with the girls.

NUMBER OF DIFFERENT CHOICES MADE

In every quartile of both boys and girls a larger number made two choices during the seven survey periods than any other number.

The boys' distribution, as shown in Table VIII, indicates that the first quartile averaged 2.83 choices, the second 2.36, and 2.34 for the third, with an average of 2.37 choices.

TABLE VII

Changes in Vocational Interests During High School

	Agriculture	Artists and Entertainers	Aviation	Clerical	Domestic and Personal	Engineer	Lawyer	Mechanical	Music	Nurse	Physical Education	Physician	Public Service	Scientific	Teacher	Teacher, Vocational	Trade	Transportation and Communication	Other Occupations	None	Totals - September 1929
Agriculture	35		1	1		2		12			1		3	1	2	1	1	1	3	4	68
Artists and Entertainers	1	1	1			1			1		1					1					6
Aviation	4	3	2	2		6	1	7		1	1	2	2				1	2	3		48
Clerical	2	1		2	5	1			2	1	1				20	1	4		1		9
Domestic and Personal				1	1	1		1		1	1				2					4	76
Engineer	4	2	4	1	1	1	1	6		1	1	2	1	2		2		1	2		4
Lawyer	3			1		1	2	1										1			9
Mechanical	9	1	5		6			34			1		4	1	3	3	3	2	6		78
Music	1			4					2	1					1			1	1	5	23

TABLE VII (Continued)

	Agriculture	Artists and Entertainers	Aviation	Clerical	Domestic and Personal	Engineer	Lawyer	Mechanical	Music	Nurse	Physical Education	Physician	Public Service	Scientific	Teacher	Teacher, Vocational	Trade	Transportation and Communication	Other Occupations	None	Totals - September 1929
Nurse		2		7	9	1		1	4	56	4				6	2	1		1	3	96
Physical Education		1								2	3		1								5
Physician	1						1					2	1	1							4
Public Service		1	1		2		2					1		1		1		1	1		1
Scientific	1						1									1		1			5
Teacher	1	2		17	10		2	1	2	22	2	1	1	4	33	1		2	7	4	12
Teacher, Vocational	1			4	1			1		1					2	1		1			105
Trade	4							4		1				1	1	5	2	1	1		9
Transportation and Communication	2				1	1		1		1					1	1	1				6
Other Occupations	1	1		1	2	2	2	2		1					3			1	2		1
None	1									1					1			1			9
Totals - December 1932	71	4	34	5	1	38	6	74	4	-	10	4	11	5	14	7	12	6	18	21	345
	-	12	3	62	28	-	-	-	20	99	10	2	-	-	74	9	7	-	13	14	359

Upper left-hand number in each square = Boys; Lower right-hand number in each square = Girls.

The first quartile of girls made, on the average, 2.04 choices while the second made 2.16 and the third quartile 2.15 average choices, with a total average of 2.13 choices. The boys of the highest quartile made a larger number of choices while the girls of the upper fourth made fewer changes. The boys also averaged 0.24 more choices than the girls.

TABLE VIII

Distribution of Boys and Girls by Number of Different Vocational Choices Made During the Seven Surveys

Quartile	Boys		Girls	
	Number	Average number choices	Number	Average number choices
I	80	2.83	91	2.04
II	180	2.36	193	2.16
III	85	2.34	75	2.15
Total	345	2.37	359	2.13

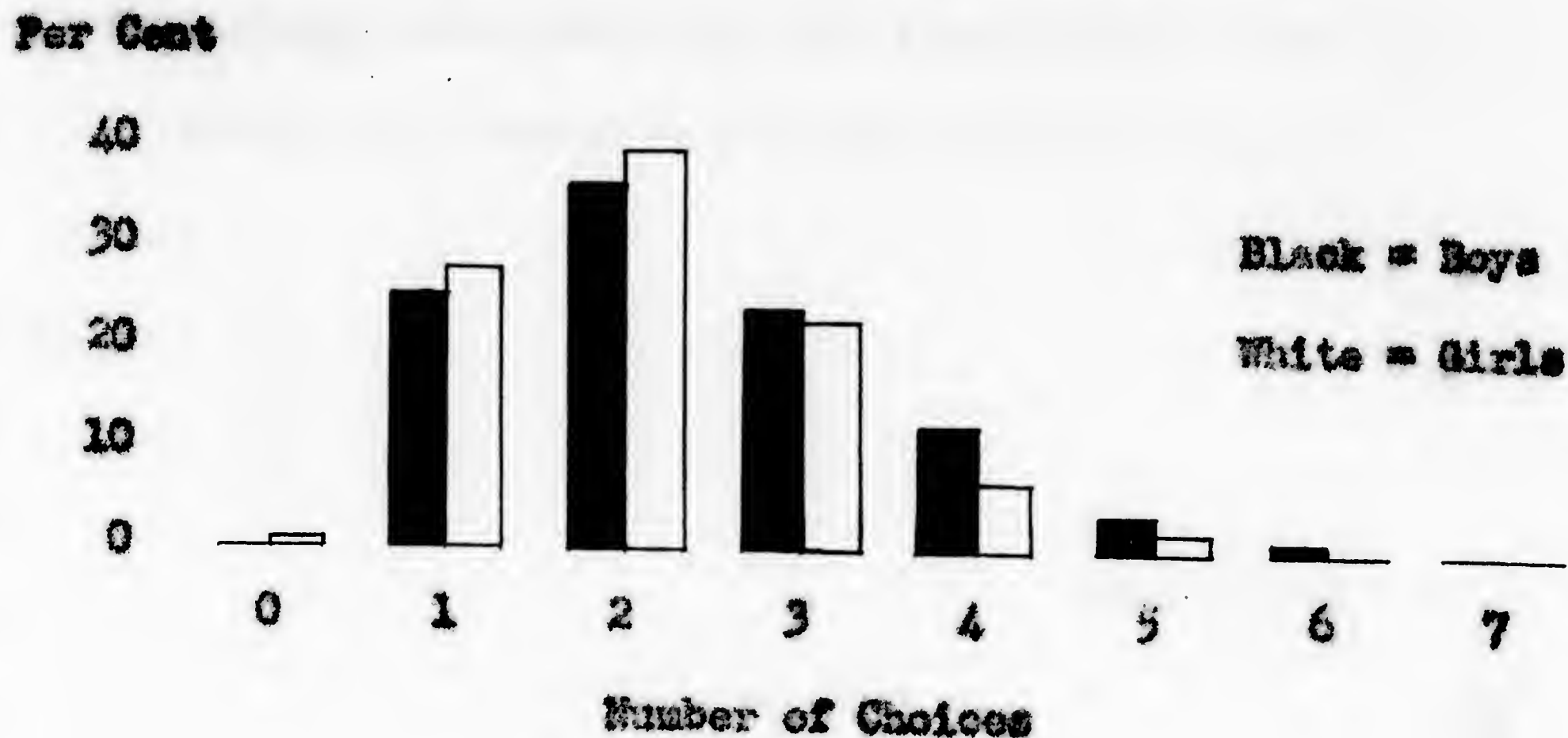
Figure 2 gives a graphic representation of the percentage of boys and girls who made each of the different number of vocational choices during the four years. The largest number of both sexes chose two different vocations. The graph also shows that a greater percentage of boys made the larger number of choices.

PERIOD FROM WHICH LAST CHOICE WAS PERMANENT

An analysis of the 704 boys and girls, according to when they selected the vocation which remained their choice until the seventh survey period in the senior year (Figure 3), shows that 24.9 per cent

FIGURE 2

Percentage Distribution of Boys and Girls Making Each Possible
Number of Vocational Choices During Four Years



retained their original choice made upon entering high school, while 28.8 per cent chose differently at the seventh period than at the sixth.

Only up to 5.8 per cent made their final choice at one of the periods covered by the surveys of May 1930, September 1930, and May 1931. There were 9.2 per cent who made a permanent choice in September of their junior year and 15.4 per cent retained the next year the preference indicated in May 1932.

From September of the freshman year, the girls exceeded the boys in per cent of those making a choice that was permanent for four years by 3.5 per cent, while 8.9 per cent more boys had made no choice that was permanent before the last survey.

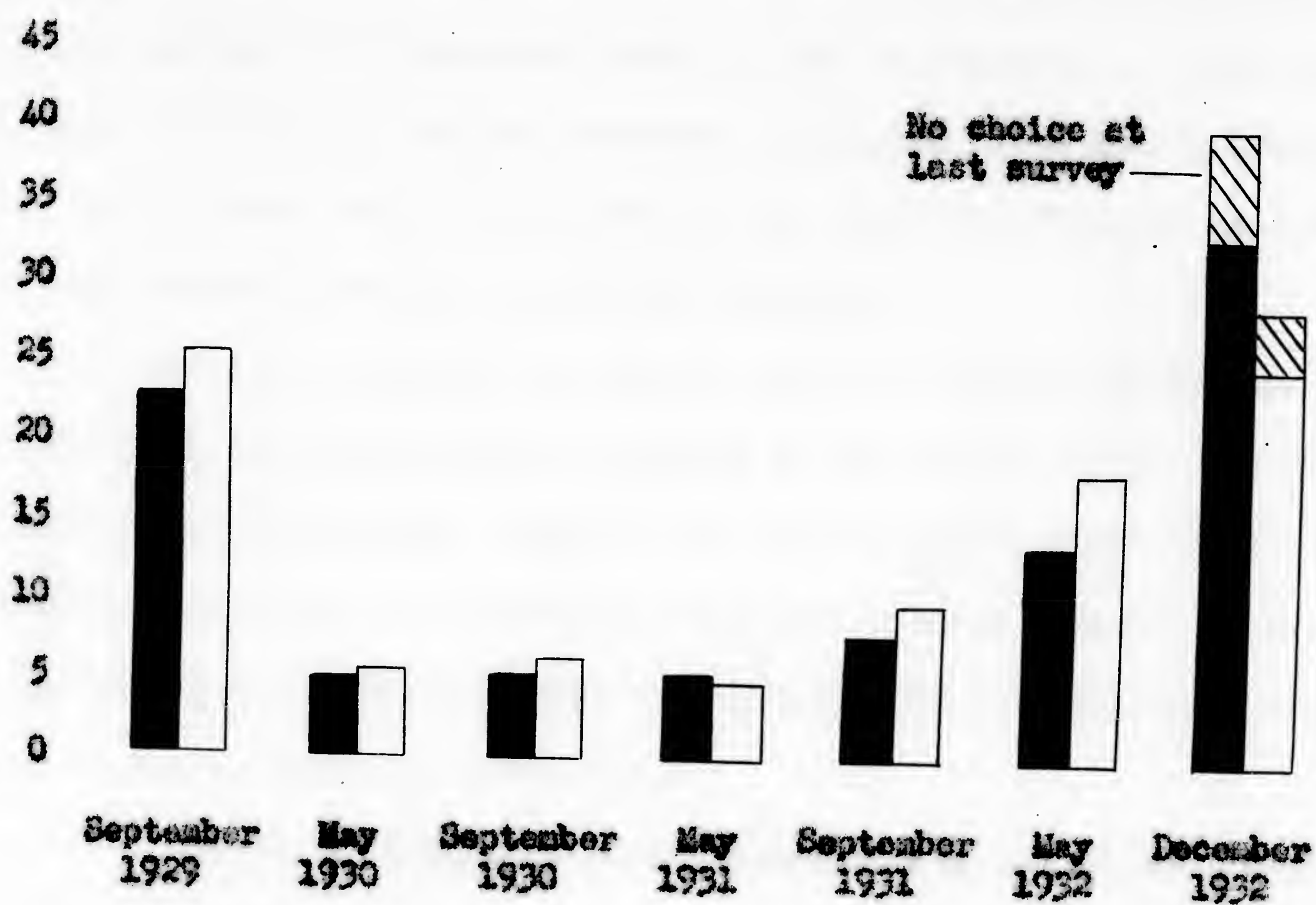
With the boys, more choosing Aviation and Agriculture made an early permanent choice than did those selecting Mechanical or Engineering occupations. All three of the most popular girls'

occupations had a predominance of early permanency.

FIGURE 3

Percentage Distribution by First Period From Which the
Senior Year Vocational Choice Remained Permanent

Per Cent



Black = Boys; White = Girls

SUMMARY

The percentage distribution of boys and girls by the twenty-fold occupational preference classification revealed the following facts: (1) the proportion choosing each vocational group remained nearly constant throughout the seven successive survey periods covering four years, (2) there are marked sex differences in vocational

preferences, and (3) approximately two-thirds of the boys consistently selected Agriculture, Aviation, Mechanical, and Engineer, while about the same proportion of girls chose Clerical, Nursing or Teaching. There were some evidences of vocational interest differences between high and low intelligence groups.

Approximately 60 per cent of the boys did not change their vocational preference during the time intervening between any two survey periods, whether from September to May or May to September. About 66 per cent of the girls' choices remained permanent. From the freshman year to the senior year, 39 per cent of the girls and 37.4 per cent of the boys retained the same vocational interest.

The table showing the changes from the original preference groups during the ninth grade is typical of the changes during any one of the succeeding periods. Most of the boys who first chose Agriculture, Aviation, Mechanical or Engineering vocations changed from one of those to another in the same four. That was likewise true of the girls who chose Clerical, Nursing, or Teaching.

Boys who chose Agriculture, Mechanical, or Aviation were above average in permanency. The groups of girls who chose Nursing, Clerical, or Music were above the permanency average. The same groups with the exception of Clerical choices by girls were also changed less during the entire four years.

The mean number of different occupations chosen by boys during the seven surveys was 2.37 and by the girls, 2.13. The upper quartile of boys showed a noticeably higher mean number of choices than the average or below average intelligence groups, but no similar difference

occurred in the choices by girls.

About one-fourth of the 704 boys and girls made no change in vocational preference from the first to last surveys, while 28.8 per cent chose a different vocational interest at the seventh survey period. During the freshman and sophomore years only up to 5.8 per cent arrived at a vocational decision at any one period which remained permanent until the senior year.

Boys choosing Agriculture and Aviation tended to have chosen their final interest earlier than other groups, while all three of the most popular of the girls' interests - Clerical, Nursing, and Teaching - had a predominance of early permanency.

CHAPTER III

Influencing Factors Revealed by the Interest History

This section of the analysis deals with the relationships such factors as the influence of persons, reasons, experiences, summer vacations, and parents' occupations have to the vocational preferences of the group studied. Reference to the questionnaire form ⁷ shows the exact wording of the questions which were intended to reveal the factors contributing to the pupil's vocational choice.

INFLUENCE OF PERSONS

Classification and summarization of the answers to the question "Did some person influence you in this (vocational) choice? If so, who?" were most advantageously effected by the following groups: (1) Parents, (2) Father, (3) Mother, (4) Relatives, (5) Other Persons, and (6) Teachers. Further clarification of this list is needed for the fourth and fifth groups. Relatives - those other than parents - were mainly brothers and uncles who influenced boys, and sisters and aunts who influenced girls. Other Persons - in the majority of cases simply designated as "a friend" - referred usually, where verifiable, to a person engaged in the occupation chosen.

Total per cent of the boys and of the girls whose vocational choices were affected by one or more persons is given in Table IX. The generalization may be drawn that approximately 25 per cent of the boys and 30 per cent of the girls recognized the influence of some person in the vocational choice they made at each survey.

⁷ Appendix, pages 63, 64, and 65.

TABLE IX
Per Cent of Pupils Who Recognized the Influence of
Persons in Their Vocational Choice

Survey Period	Boys	Girls
September 1929	27.5 %	36.5 %
May 1930	21.0	26.9
September 1930	26.3	29.6
May 1931	24.4	28.3
September 1931	26.0	28.1
May 1932	24.4	30.5
December 1932	22.9	27.3
Average	24.8	29.6

Using the totals for the seven survey periods, it was learned that Fathers, Other Relatives, and Other Persons were about equally more important than Parents, Mothers, and Teachers in influencing boys' choices. Percentages for the girls showed that Other Persons and Other Relatives slightly outweighed Mothers in their influence and that Teachers, though less important than the first three, were still twice as influential as Parents or Fathers.

The original tabulation of the influences of persons according to survey periods and intelligence quartiles showed no appreciable variation from the figures in Table IX and Table X. The proportion choosing each occupation who were influenced by persons was approximately equal.

TABLE X
Proportion of Various Persons Among Those Who
Influenced the Pupils' Vocational Choices

	Boys	Girls
Parents	7.1	8.2
Fathers	24.7	6.4
Mothers	5.7	19.7
Relatives	23.0	24.6
Other Persons	27.8	26.9
Teachers	11.7	14.2

From the comparison of boys naming a person who influenced them with the gross distribution of boys' vocational choices, it was learned that a large proportion of those influenced by Fathers had chosen Agriculture, Mechanical, and Other Occupations. Mothers exerted greatest influence on boys who chose Lawyer, Physician, and Teacher. Relatives influenced an above average proportion of Mechanical choices. Other Persons dominated the influencing of Aviation choices. Teachers, either by counsel or by example, were the cause of most of the Teaching preferences.

Parents influenced girls to be Teachers. Fathers were more important in daughters' choice of Clerical and Teaching careers. Mothers were above average in aiding Nursing and Vocational Teacher choices. Relatives helped girls largely to choose Nursing and Clerical. Other Persons were most influential in Teaching choices and Teachers were responsible for more than an average proportion of Music preferences.

INFLUENCE OF EXPERIENCES

The experiences named by the boys and girls, in answer to a direction question,⁸ as having helped them decide upon their vocational choice, were grouped into the following types: (1) Doing the work, (2) Seeing it done, (3) Doing related play or work, (4) Reading or hearing about it, and (5) A culmination of experiences.⁹ The first type of experience meant actual participation in the chosen occupation; the second, observing one or more persons at work; the third, participating in work or play of the same essential nature as the preferred vocation; the fourth, reading or conversation; and the last, experiences gained from an association with the work or its study during an indefinite period of time.

The average proportion of the boys who recognized an experience which had influenced their vocational choice, as given in Table XI, was 40.1 per cent and for the girls 28.4 per cent. There was not a wide variation from one survey to any other.

The classification of the gross distribution of types of experiences influencing the vocational preferences of rural high school pupils, Table XII, indicates that "Doing related play or work" was the most usual guiding experience.

The reason that 29.7 per cent of the experiences influencing girls were listed under "Doing the work" was because the larger part of

⁸ See Questionnaire Form, Appendix, pages 63, 64, and 65.

⁹ Classification from thesis by Hunsberger, P. H., "A Study of Certain Factors Influencing the Vocational Choices of Ninth Grade Pupils Attending Rural High Schools in Pennsylvania." The Pennsylvania State College, Department of Rural Education, State College, Pennsylvania, 1930.

TABLE XI
Per Cent of Pupils Who Recognized the Influence of
Experiences in Their Vocational Choice

Survey Period	Boys	Girls
September 1929	34.5 %	25.7 %
May 1930	39.5	29.0
September 1930	38.6	29.3
May 1931	44.7	33.0
September 1931	35.7	24.9
May 1932	44.7	27.3
December 1932	44.7	29.5
Average	40.1	28.4

TABLE XII
Distribution of Frequency of Mention of Five Types of Experiences
Affecting Vocational Choices (Average of Seven Survey Periods)

Type of Experience	Boys	Girls
Doing the work	2.3 %	29.7 %
Seeing it done	14.8	11.4
Doing related work or play	65.8	38.4
Reading or hearing about it	5.6	3.5
A culmination of experiences	11.5	17.0

the girls naming an experience influencing them to choose Nursing stated that they had actually done the work.

Most of the boys indicated that working on a farm was the experience influencing them to want to enter Agriculture, and were classed under "Doing related work or play." The majority of Aviation experiences were from seeing the work done. All other boys' occupations were largely affected by experiences involving the doing of related work or play. The same statement is true of all the girls' vocational preferences except Nursing. More girls indicated that studying influenced Teaching and Music choices than was true of other groups.

REASONS GIVEN FOR VOCATIONAL CHOICES

The vocational interest questionnaire provided space for an answer to the question, "Why do you want to go into this line of work? Give your main reason," to determine whether the uncontrolled reasons given indicated that sound judgment had prompted the choice. The analysis of the reasons also shows their relationship to ability, to sex, to the nature of the occupation, and to the choices made at the successive survey periods.

The responses were grouped under the following 11 types of reasons: (1) Enjoyable work, (2) Interesting work, (3) Good financial returns, (4) To be of service, (5) Opportunity for advancement, (6) Fitted for the work, (7) Easy work, (8) Permanent work, (9) Adventurous work, (10) None, and (11) Miscellaneous reasons. The distribution of boys' and girls' reasons for their vocational preferences in the freshman year, September 1929, and in the senior year, December 1932, appears in Table XIII.

Over 50 per cent of the boys and of the girls, at both periods given in the table, stated that they chose their vocational

preference either because it was Enjoyable work or because it was Interesting. The percentage giving these two reasons increased from the freshman year to the senior year, probably indicating that a genuine interest existed; but simply to say that they like or enjoy the work, or that it is interesting, is too general to denote a carefully thought-through reason.

TABLE XIII

Distribution of Reasons Given for Vocational Choices

Reason	Boys		Girls	
	September 1929	December 1932	September 1929	December 1932
Enjoyable	42.3 %	38.3 %	52.7 %	56.5 %
Interesting	11.6	18.0	16.4	20.9
Financial	13.6	8.7	5.0	3.1
Service	2.0	1.5	10.9	2.8
Opportunity for Advancement	3.2	10.4	.8	1.7
Fitted for the Work	2.3	3.7	.6	4.7
Easy Work	3.2	.6	.8	.6
Permanent Work	2.9	2.3	.6	1.1
Adventurous	6.1	1.7	-	-
Miscellaneous	7.3	3.2	6.4	1.1
None	5.5	11.6	5.8	7.5

The boys' distribution shows a larger proportion of vocations chosen because of financial returns, the opportunity for advancement, and for adventure than the girls' reasons. In the freshman year, girls choosing Nursing caused the 10.9 per cent of Service reasons. Boys who chose an adventurous occupation almost exclusively had selected Aviation.

Boys' Aviation and Mechanical choices accounted for the financial returns' reasons, while Aviation and Engineering were preferred by those who named the opportunity for advancement for their reason.

INFLUENCE OF SUMMER VACATION EMPLOYMENT

The record of summer vacation employment was made for the purpose of determining the possible cause of a change in vocational choice in September from that expressed the preceding May. Table XIV shows that over 90 per cent of the girls worked at home and over 75 per cent of the boys were employed on the home farm or not at all.

Of the less than 10 per cent of the 359 girls who worked away from home any one or more summers, nearly half of them made a change in vocational choice to the occupation in which they were employed. The boys, with but one or two exceptions, made no vocational preference change traceable to summer employment, as separate from the parents' occupation.

Children of this age would not generally be expected to be employed away from home during the summer vacation, but the probability would be that more should have work outside the home after the eleventh grade than after the eighth, as was true here. The influence of the economic stresses of the depression years probably is demonstrated.

INFLUENCE OF THE PARENTS' OCCUPATION

The percentage distribution of the parents' occupations, using the same classification as was used for the pupils' vocational interests, is compared with the pupils' senior year choice distribution in Table XV. Both the boys and girls selected a wider range of vocations than those in which their parents were employed. If the boys' vocational opportunities

TABLE XIV

Pupils' Summer Vacation Employment - In Per Cent of Total Number

	Boys				Girls			
	1929	1930	1931	1932	1929	1930	1931	1932
Clerical	-	-	-	-	.6	.3	.9	-
Domestic and Personal	4.0	4.4	4.6	3.2	3.1	3.4	4.7	5.0
Farm Work	66.4	68.7	63.8	58.0	7.5	4.4	5.8	2.8
House Work	-	-	-	-	67.7	69.7	67.4	62.8
Mechanical	17.1	16.0	16.5	11.6	.9	.9	-	-
School	-	-	-	-	.9	.3	-	-
Trade	5.2	5.5	4.0	4.6	1.4	3.6	3.4	3.1
Transportation and Communication	.6	1.2	1.2	2.0	-	-	-	-
None	6.7	2.9	3.5	9.0	10.3	13.4	10.0	16.2
Not Given	-	1.4	6.4	11.6	.6	1.1	3.9	9.6

TABLE XV

Comparison of Distribution of Parents' Occupations and Pupils' Vocational Choice in the Senior Year

	Boys		Girls	
	Parents	Pupils	Parents	Pupils
Agriculture	43.5	20.6	47.6	0.0
Artists and Entertainers	-	1.2	-	3.4
Aviation	-	9.9	-	.8
Clerical	.3	1.4	.3	17.8
Domestic and Personal	1.7	.3	2.0	7.8
Engineer	.9	11.0	.3	-
Lawyer	-	1.7	-	-
Mechanical	27.2	21.4	29.5	1.7
Mining	4.9	-	1.4	-
Music	-	1.2	-	5.6
Nurse	-	-	-	27.5
Physical Education	-	2.9	-	2.8
Physician	-	1.2	-	.6
Public Service	2.3	3.2	.8	-
Scientific	-	1.4	-	-
Teacher	.6	4.1	.8	20.6
Teacher, Vocational	-	2.0	-	2.5
Trade	9.0	3.5	10.0	2.0
Transportation and Communication	4.1	1.7	3.6	-
Other	3.5	5.2	1.4	3.6
None	2.0	6.1	2.0	3.9

were the same as their parents' occupations, only the group of 9.9 per cent choosing Aviation would have made grossly unwise choices. Because the girls gave the father's occupation, no comparison to determine their vocational opportunities can be made.

The proportion of boys and girls who expressed a vocational preference similar to the parent's occupation in the freshman year and again in the senior year is given by quartiles in Table XVI. The variations in the number of boys choosing the same occupation as their father in any quartile and during either the ninth or twelfth grade were only from 21.7 per cent for the Q-II boys in the senior year to 25.6 for the same quartile in the freshman year. The largest number of girls choosing a vocation within the same occupational group as the father's occupation was 10, or 2.7 per cent, by the Q-III girls in the freshman year.

TABLE XVI

Per Cent Choosing Same Occupation As Male Parent

Quartile	Boys		Girls	
	September 1929	December 1932	September 1929	December 1932
Q-I	22.5	22.5	2.2	2.2
Q-II	25.6	21.7	0.	1.0
Q-III	22.4	23.5	2.7	1.3
Total	24.1	22.2	1.1	1.4

Table XVII shows the per cent of boys and of girls whose parents were engaged in Agriculture, Mechanical occupations, or Trade who chose the most popular vocations. The per cent of boys whose

TABLE XVII

Per Cent of Pupils Choosing the Most Popular Vocations -
Classified According to Parents' Occupations

Parents' occupation	Per cent of all parents		Per cent of boys choosing: September 1929	December 1932
Agriculture	43.5	Agriculture	30.9	30.2
		Mechanical	21.6	22.1
		Engineer	8.0	8.7
		Trade	2.6	2.7
Mechanical	27.2	Mechanical	30.3	25.3
		Agriculture	16.0	12.7
		Engineer	10.1	9.5
		Trade	6.8	5.3
Trade	9.0	Trade	11.1	6.4
		Agriculture	0.0	12.9
		Mechanical	22.2	12.9
		Engineer	16.7	12.9
Per cent of girls choosing:				
Agriculture	47.6	Clerical	18.8	18.1
		Nurse	28.7	30.4
		Teacher	33.3	18.7
Mechanical	29.5	Clerical	27.1	19.0
		Nurse	27.1	29.0
		Teacher	27.1	19.0
Trade	10.0	Clerical	10.0	19.5
		Nurse	32.9	13.9
		Teacher	19.4	22.2

fathers were in Agriculture who chose the same vocation was 30.9 compared with 19.7 per cent of all boys who chose Agriculture (Table IV) in the freshman year, and was 20.2 per cent in the senior year, as against 20.6 per cent of all the boys. The same comparison of the boys whose

fathers were engaged in Mechanical work showed that 30.3 per cent of the sons chose Mechanical work while only 22.6 per cent of all the boys made that decision in the freshman year. A larger per cent of boys whose fathers were in Trade (meaning business enterprises) chose that work than of all boys.

Since almost none of the girls chose the fathers' occupation, the only relationship which might be established would be to learn that the parents' occupation influenced the proportion of girls choosing Clerical, Nursing, or Teaching. The figures in Table XVII, when compared with Table IV, do not show any such distinctions.

SUMMARY

An average of 28.4 per cent of the boys and 29.6 per cent of the girls at each survey period recognized that some person had influenced their vocational choice. Relatives, other than either or both parents, and Other Persons constituted 50.8 per cent of the persons influencing boys and 51.5 of those influencing girls. Fathers were 24.7 per cent of the persons influencing boys and Mothers made up 19.7 per cent of those affecting girls' choices.

Boys indicated that in an average of 40.1 per cent of their expressions of vocational interests some experience had been influential. Only 28.4 per cent of the girls were aware of an experience affecting their choice.

With boys and girls, doing work or play related to the occupation was a more frequent experience than doing the work, seeing it done, reading or hearing about it, or a culmination of indistinguishable experiences.

From 53.9 and 69.1 per cent in the freshman year to 56.3 and 77.4 per cent of the boys and girls, respectively, in the senior year, stated that they chose the occupation because it was enjoyable work or that it was interesting. Boys indicated that the opportunity for advancement, or because the work was adventuresome, or because of financial returns were more likely to be the causes of the vocational preferences than did the girls who exceeded the boys in per cent of reasons given that the work offered opportunity to be of service to others.

From 68.7 to 58 per cent of the boys worked on the farm during the summers, and 69.7 to 62.8 per cent of the girls did housework. More had no employment during the summer before their senior year than any of the three preceding summers. Vacation employment had no effect on boys' choices in the following September, and only affected those girls who worked away from home.

An average of 24.1 per cent of the boys chose the same occupation as their fathers when in the ninth grade and 22.2 per cent when in their senior year. Only 1.1 and 1.4 per cent of the girls chose work similar to the fathers' occupations. With the exception of some influence of parents' occupation on boys' choices of Agriculture and Mechanical work, there was no relationship with the pupils' choice. Pupils made a much wider range of choices than the distribution of the parents' occupations.

CHAPTER IV

The Reliability and Validity of Subjective Estimates of Interests by High School Pupils

WHAT IS BEING MEASURED?

In purposing to study the interests of rural high school pupils, the extent to which the interest groups could be separated, and the classification of pupils into distinct special interest groups, were set up as criteria of the validity of the results obtained. To these must be added proof that the pupils who supplied the information were representative of the group to which the concluding statements are assigned, and that the subjective estimates of interests are founded upon more than a fancy of the moment.

Examination of the cumulative individual interest histories showed that practically all of the types of vocational choices were specific statements of special interests. Only the 1.2 per cent to 5.0 per cent of the total who were unwilling or unable to make a vocational choice were indistinguishable. The intelligence quotients made it possible to group the pupils relatively according to native mental ability.

The representative character of the sampling is attested by the distribution of the 36 schools among 29 of the 67 counties in Pennsylvania; by the range in size of the high schools through the variation in 1929 freshman class enrollment of from 13 to 65 pupils; and that 79.2 per cent of the pupils entering these schools that year supplied records usable in this analysis.

That the distribution of group vocational interests, as estimated by the children themselves, was more than a chance grouping was conclusively demonstrated in Table IV where a remarkable similarity of vocational interests persisted through the seven survey periods. The degree of assurance that the same vocational choice would be retained through each successive year was measured for the group by the average percentage permanency and found to be close to 60 per cent. While the permanency through the four years dropped to slightly less than 40 per cent (Table V), it was pointed out that the interest history showed the large majority of individuals shifting their vocational preferences within a relatively narrow range.

In the succeeding paragraphs of this chapter, the validity of the vocational interests is tested by a comparison with a Work Interests Inventory which was Part IV of the questionnaire used. Two other divisions of the survey form, Parts III and V, asking the pupils to choose from the lists provided the school subjects and recreational activities they liked best to attend, are used to determine not only what those interests are, but whether the answers are more permanent, more reliable, than the vocational choice which was free from suggestion.

The practicality of the vocational interest expressions is involved in their comparison with the pupils' curriculum choice of the same year.

THE WORK INTERESTS INVENTORY

The list of 22 different types of work from which the pupils selected their first three preferences would, if free from error, indicate to some extent the degree of group interest in each work activity.

Table XVIII gives the percentages for boys and girls when freshmen and again when seniors.

The results do, in general, correspond with the group distribution of vocational choices. However, Nursing, Home-making, and Athletics were not included in the inventory and consequently received less than their correct per cent of group interest. Reference to the questionnaire form (Appendix, pages 63-65) will show the inadequacies of the description of each type of work. Dr. J. B. Miner,¹⁰ of the Carnegie Institute, who developed this inventory, said of it,

"The purpose of this blank is to help to discover special interests and abilities by suggesting how to observe one's own likes and dislikes. Nevertheless, a tabulation of the results does give a cross section of the minds of these high school students at the time of filling out the blank."

The important results of the use of this work interests inventory are the figures for the percentage permanency of pupil preferences from one survey period to a succeeding period. Table XIX indicates that this inventory is slightly (though not significantly) less reliable than the vocational choice because the permanency of choices is lower, except from the first to last survey periods. It is decidedly less valid, due to the errors and inadequacies of the scope and clarity of the types of work.

EDUCATIONAL INTEREST DEVELOPMENT

Gross totals of first, second, and third choices of school subjects liked best in the ninth grade and in the twelfth grade are given in percentages of the total in Figure 4. The boys in the senior

¹⁰ Miner, J. B. "An Aid to the Analysis of Vocational Interests." *Journal of Educational Research*. 5:311-323. April 1922.

TABLE XVIII
Percentage Distribution of Work Interests

Type of Work	Boys		Girls	
	September	December	September	December
	1929	1932	1929	1932
Growing plants	9.0	8.4	4.1	1.0
Care of animals	12.5	10.4	1.8	.5
Operating engines	19.8	13.8	.2	.5
Operating machines	8.6	7.8	.2	.1
Installing equipment	8.5	8.6	-	-
Construction work	6.3	6.8	-	-
Delicate muscular movements	1.2	1.2	.7	1.8
Discovering and repairing defects	2.8	1.7	1.0	.7
Transporting activities	2.8	5.1	-	.1
Meeting and directing people	.9	.9	10.6	15.4
Teaching	5.2	6.4	21.5	18.1
Welfare work	.3	1.1	2.3	7.1
Advisory services	2.7	3.3	1.1	2.4
Organizing people	.9	1.1	2.0	2.4
Influencing people directly	1.2	1.6	1.8	1.3
Influencing people indirectly	.8	1.4	1.0	2.8
Organized planning	1.5	1.9	1.7	2.0
Scientific work	5.3	7.0	3.9	4.4
Recording and systematizing records	1.4	1.6	8.2	9.9
Entertaining people	3.9	4.0	14.2	10.5
Artistic skill	1.8	1.2	9.5	7.0
Artistic creation	1.5	1.6	8.5	5.3
Athletic sports*	1.2	2.2	.5	1.8
Nursing*	-	1.0	4.5	4.3
Home-making*	-	-	.8	.8

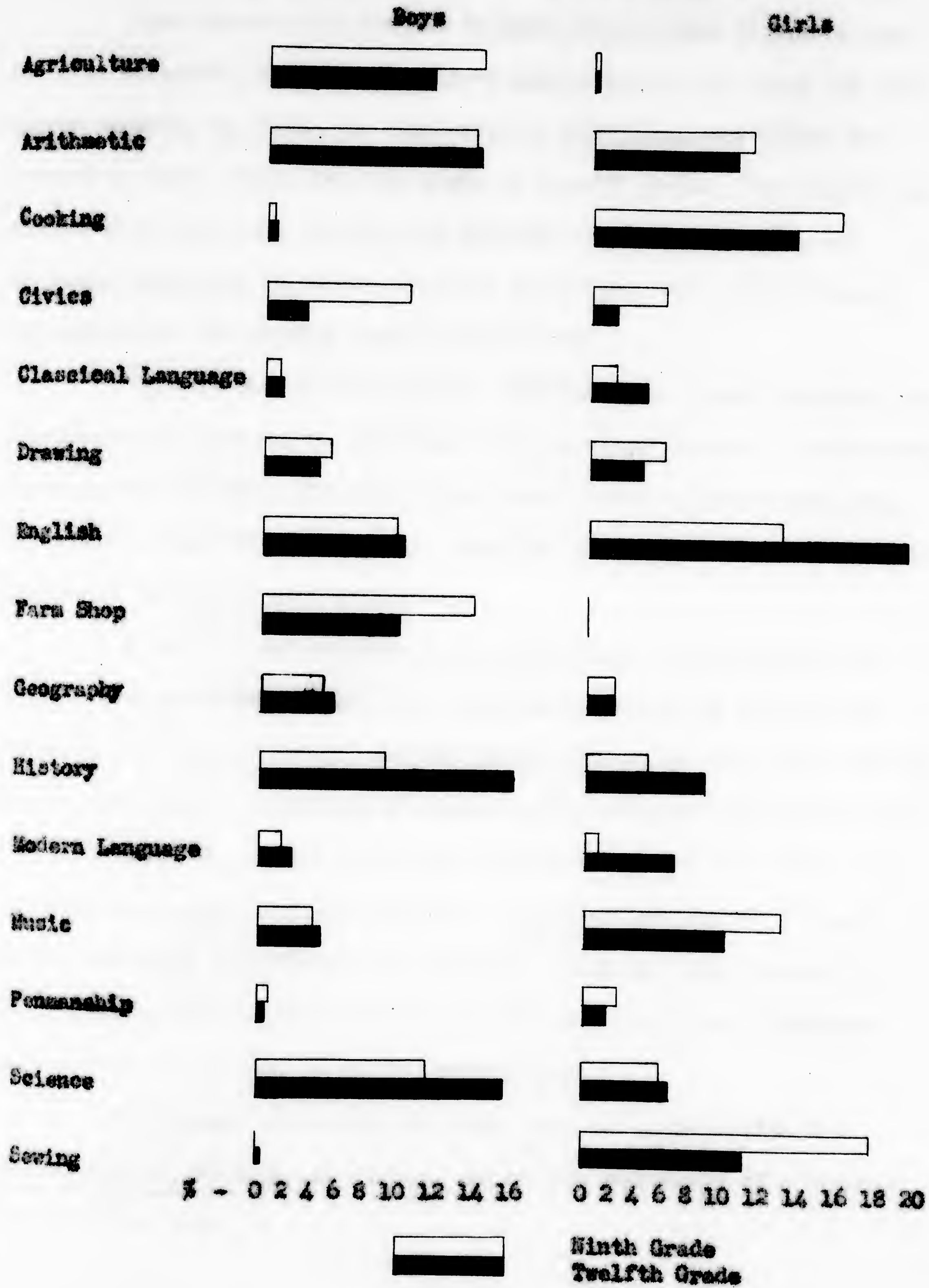
* Not included in the list on the questionnaire.

TABLE XIX
Permanency of Work Interests

	Boys	Girls
September 29 to May 30	52.9 %	55.4 %
May 30 to September 30	54.7	55.8
September 30 to May 31	53.8	56.7
May 31 to September 31	56.4	56.4
September 31 to May 32	56.3	58.3
May 32 to December 32	57.1	60.2

FIGURE 4

Distribution of Educational Interests of Rural Pupils in
Ninth and Twelfth Grade by Percentage of Total of
First, Second, and Third Preferences



year favored History slightly over Science, Arithmetic, Agriculture, and Farm Shop. The girls accorded first place to English, with Cooking and Sewing ahead of the other two preferred subjects, Music and Arithmetic.

Some interesting changes in group educational interests are noted by comparing the rank of subject preference at the first and last survey periods, in Figure 4. Agriculture, Farm Shop, and Civics decreased in boys' favor from the ninth to twelfth grade. The notable increases with boys were History and Science. English, History, and Languages increased in number of girls preferring each, while Sewing, Civics, Music, and Cooking lost in popularity.

Boys in the quartile having superior intelligence consistently, throughout the four years, expressed above average interest in Arithmetic, History, and English. The boys having below average intelligence preferred Farm Shop and Agriculture. Superior girls exceeded the others in choices of Arithmetic and Languages.

A significant characteristic difference in educational interests between urban Pennsylvania high school pupils as surveyed by ¹¹ Doctor Miner in Pittsburgh, and the pupils attending rural high schools, is the much larger proportion of rural pupils preferring the Vocational Agriculture and Home-making subjects than of urban children liking the Industrial and Home Economic courses. A smaller percentage of rural pupils expressed a preference for Science, which may have been due to their greater removal from contact with the practical use of science information, or to less adequate instruction.

The larger percentage of rural boys and girls liking the social studies, History and Civics, may be the expression of a typical

¹¹ Op. Cit., page 37.

rural interest, or may have been influenced by the nation-wide increase¹² in attention given to problems in social relations since 1929. Mackaye, studying 400 children in rural districts in California, added to his discussion of periods in the child's life when interests become relatively fixed, the comments that at the time of leaving the elementary school a general desire for mastery over things is dominant which late in the high school period, after experiencing readjustments in ideas and economic situations, is turned to ideas of mastery over people. This study of educational interests would substantiate that statement.

The percentages of permanency of educational interests from one survey period to the next, and from the ninth to twelfth grade are given in the following table:

TABLE XX
Permanency of Educational Interests

Survey Period	Boys	Girls
September 1929 to May 1930	57.3 %	58.1 %
May 1930 to September 1930	59.7	60.5
September 1930 to May 1931	63.9	60.5
May 1931 to September 1931	63.4	62.0
September 1931 to May 1932	67.0	65.1
May 1932 to December 1932	66.8	69.1
September 1929 to December 1932	45.2	46.1

¹² Mackaye, D. L. "The Fixation of Vocational Interest." *American Journal of Sociology*. Volume 33: 353-370. November 1927.

The figures indicate that the odds are nearly three to two that school subject preferences will not change during any one year, and about an even chance that they remain constant during the high school period. The individual interest histories show that the majority of children consistently express their educational interests within a narrow range of subjects. Probably the greatest single factor in the development of interests is the opportunity to experience the occupation or activity and gain information about it.

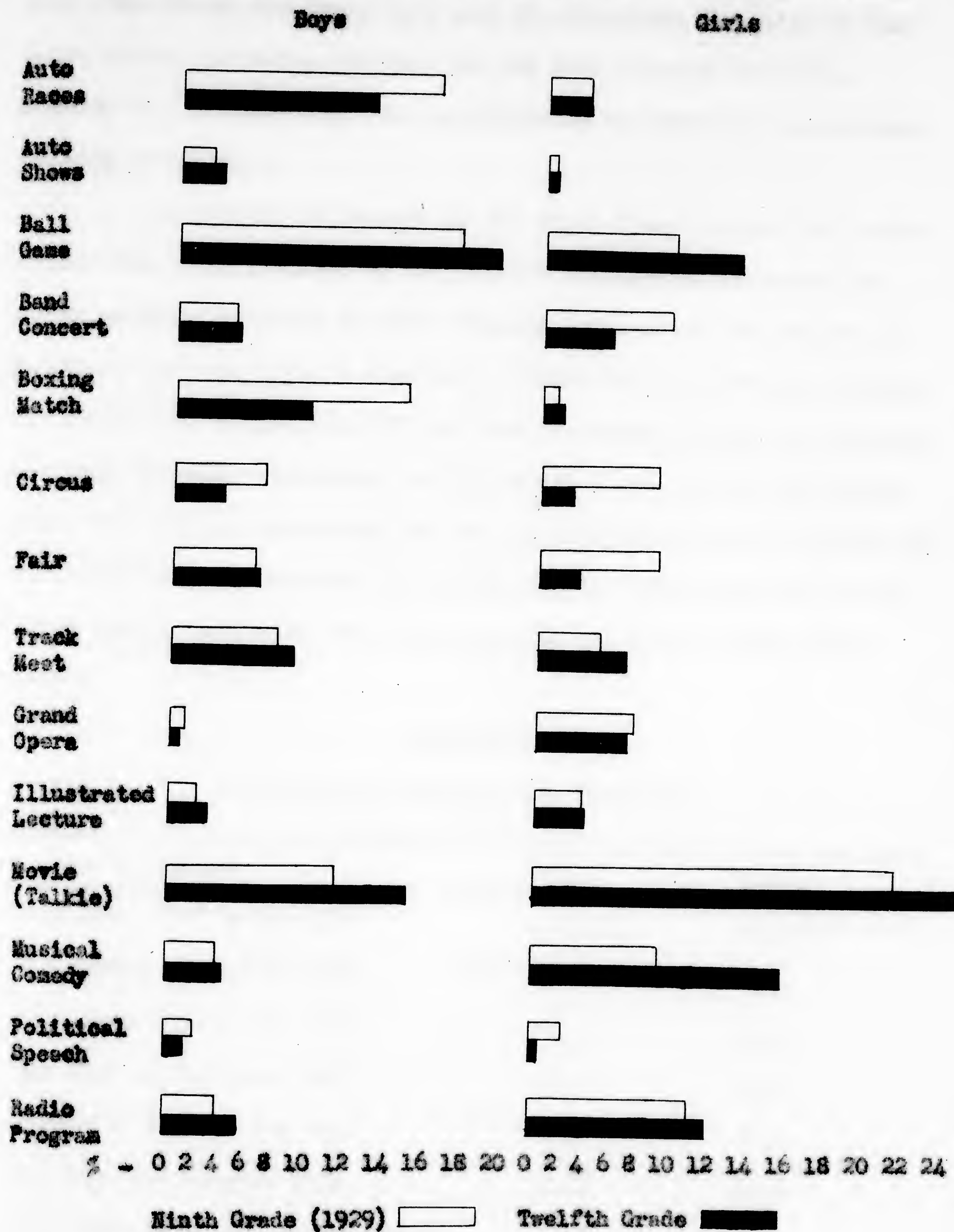
RECREATIONAL INTERESTS

The distribution of preferences for 15 recreational activities which made up a list from which the pupils were asked to designate the first three they liked best to attend does unquestionably confirm some general interests of adolescent boys and girls and, by the successive surveys, shows some developments which take place. The percentage of boys and girls making a first, second, or third choice of each type of recreation on the September survey at entrance into high school, and at the senior year survey, are given in Figure 5. The changes in gross percentages of preference were made gradually, as was shown by tabulation of the distribution at the intervening survey periods.

The boys continued throughout the four years to make from 40.3 to 38.8 per cent of their preferences within the three athletic recreations - Ball Games, Boxing Match, and Track Meet - with Auto Races attracting 16.4 to 13.0 per cent and Motion Pictures 11.2 to 15.3 per cent. From 21.7 per cent in the freshman year to 24.8 per cent of the girls in the senior year expressed their most liked recreation on the list to be Motion Pictures. By grouping Musical Comedy, Radio Program, and Grand Opera, a total of from 27.0 to 34.5 per cent of the

FIGURE 5

Distribution of Recreational Interests of Pupils in Ninth and Twelfth Grade by Percentages of Total of First, Second, and Third Preferences



girls were most interested in Music. The proportion of girls who liked to attend Ball Games increased during high school from 9.2 to 13.1 per cent. The Circus and Fairs were less an attraction for girls as they became older; the boys, however, did not lose interest in Fairs, probably due to attendance and participation in vocational agriculture fair-day activities.

The average percentage of the first three recreational activities which were retained as the child's preferences at succeeding survey periods, as given in Table XII, is a measure of the degree of permanency of this type of interests. There was no difference between the sexes, both having above 50 per cent permanency during the freshman year and gradually increasing to 67.2 and 67.6 per cent in the senior year. The average permanency for the superior intelligence quartile of both boys and girls exceeded the percentage for those with the lowest native mental ability by from three to five per cent at each survey period.

TABLE XII

Permanency of Recreational Interests

Survey Period	Boys	Girls
September 1929 to May 1930	55.6 %	53.9 %
May 1930 to September 1930	58.5	60.3
September 1930 to May 1931	61.2	62.5
May 1931 to September 1931	62.7	63.0
September 1931 to May 1932	65.8	62.8
May 1932 to December 1932	67.2	67.6
September 1929 to December 1932	48.8	42.6

13

Franklin observed from the percentages of permanency of recreational interests chosen from an almost identical list, that the fact that the boys had 41 per cent permanency as compared with 36 per cent for the girls is evidence that when girls' interests are not restricted in range any more than boys' interests, they do not tend to have higher interest permanency. There are two variable factors in comparing Franklin's Baltimore Junior High School pupils with the results of this study. One difference is the rural-urban contrast, and the other is that the rural pupils were two school years more advanced.

The distribution of recreational interests expressed by the boys and girls of this study, whose homes are either on farms or in small towns, cannot be the same as if they had had the opportunity to experience all of the activities from which they were asked to choose. The inventory was, then, in part an estimate of potential likes and dislikes and partly a judgment of experiences.

VOCATIONAL INTERESTS AND CURRICULUM CHOICE

In order to determine the degree to which the pupils had chosen the high school curriculum which would best prepare them for the vocation they preferred, it was necessary to classify the 20 vocational groups used in this study according to that criterion. All of the high schools offered curricula designated as, Academic, Vocational Agriculture, and Home-making, and part of the schools had a Commercial course. The grouping shown in Table XXII is as near correct as could be arrived at in a general classification. A few vocations, Mechanical, Trade, Clerical, Nurse, Music, and Home, were considered correctly placed

13 Franklin, E. E., Op. Cit., page 13.

TABLE XXII

Classification of Vocational Groups According to the High
School Curriculum Offering Best Preparation for That Work
and Per Cent of Pupil Correspondence Each Year

Agriculture, Vocational	Academic	Home-making	Commercial
Agriculture	Teacher	Domestic and	Clerical
Vocational	Scientific	personal	Trade
teacher	Lawyer	Vocational	
Mechanical	Physician	teacher	
None	Physical	Nurse	
	education	Music	
	Engineer	None	
	Public service		
	Aviation		
	Transportation		
	and communication		
	Domestic and		
	personal (boys)		
	Other		
	Artists and		
	entertainers		
	Nurse		
	Music		
	Clerical		
	Trade		
	None		

Per Cent of Pupils
Enrolled in the Curriculum Best Preparing for
Their Vocational Choices

Year	Boys	Girls
Freshman	60.0	55.7
Sophomores	63.2	57.7
Junior	76.4	78.9
Senior	77.1	82.3

under more than one curriculum, either because of the scope of the training usually offered or, in the case of Clerical and Trade, because not all of the schools maintained a Commercial curriculum.

From the above classification, the per cent of agreement between the pupils' vocational choices in September of each year and their curriculum choice of the same year were found, with the boys, to increase from 60.0 per cent in the ninth grade to 77.1 per cent in the twelfth year. The per cent of correspondence of girls' vocational interests and high school curriculum increased during the four years from 55.7 per cent to 82.3 per cent.

The factor probably responsible for the lower proportion of correct curriculum choices in the ninth and tenth grades is that 29 of 36 schools are rural community vocational schools which require that all Freshmen and Sophomores enroll in the Vocational curricula. Table XXIII, giving the distribution of vocational choices separated into curriculum groups, shows the decrease in the proportion of pupils enrolled in Agriculture and Home-making.

There is a need for more careful guidance in the choice of high school work, but there should be perfect agreement between the vocational choices and curriculum groups only if the vocational choice were invariably correct for every individual and no other factor were to exert any influence. Inasmuch as the vocational choices had a permanency of approximately two-thirds, the reliability of the influence of the vocational choice upon the curriculum selected can be established at at least a two-thirds proportion.

TABLE XXIII
Vocational Choice and High School Curriculum

	Boys												Girls											
	September 1929			September 1930			September 1931			December 1932			September 1929			September 1930			September 1931			December 1932		
	Agriculture	Academic	Commercial	Agriculture	Academic	Commercial	Agriculture	Academic	Commercial	Agriculture	Academic	Commercial	Home-making	Academic	Commercial	Home-making	Academic	Commercial	Home-making	Academic	Commercial	Home-making	Academic	Commercial
Agriculture	59	9	2	59	7	1	43	21	-	44	27	-	-	-	-	-	-	-	-	-	-	-	-	-
Aviation	29	12	1	36	12	-	21	25	1	15	19	-	4	-	-	2	-	-	-	2	-	-	3	-
Clerical	6	2	1	5	1	-	1	3	1	-	4	1	47	15	14	42	8	17	18	21	19	18	28	16
Domestic & Personal	1	1	1	3	3	-	1	-	-	1	-	-	4	-	-	9	3	-	6	4	1	17	11	-
Public Service	6	3	1	5	2	-	2	4	-	1	5	5	1	-	-	-	-	-	-	1	-	-	-	-
Trade	10	6	-	5	7	1	1	11	-	1	5	6	6	-	-	1	1	1	3	3	1	1	4	2
Transportation & Communication	4	1	-	1	3	-	1	3	-	2	2	2	1	-	-	1	-	-	-	-	-	-	-	-
Mechanical	61	15	2	61	13	1	25	43	-	36	47	1	6	-	-	7	3	-	6	3	-	5	1	-
Engineer	27	14	1	27	19	-	10	37	2	6	32	-	-	-	-	-	-	-	-	-	-	-	-	-
Artists and Entertainers	4	1	1	1	2	1	1	3	-	-	1	3	6	3	-	10	2	-	1	4	1	3	9	-
Lawyer	5	3	1	2	3	-	-	3	-	2	4	-	1	-	-	-	-	-	-	-	-	-	-	-
Physician	2	3	-	3	3	-	-	4	1	-	4	-	-	1	-	1	-	-	-	1	-	-	2	-
Nurse	-	-	-	-	-	-	-	-	-	-	-	-	75	21	-	76	20	7	36	61	5	38	58	3
Teacher	9	3	-	9	6	4	1	16	-	1	13	-	78	23	4	68	19	-	24	54	3	17	54	3
Music Teacher	3	2	-	3	2	-	-	5	-	-	3	1	15	8	-	16	5	-	3	14	-	6	14	-
Vocational	3	1	-	2	1	-	4	-	-	2	5	-	5	4	-	11	3	-	11	6	-	7	2	-
Physical Education	4	1	-	2	4	-	6	2	-	3	7	-	1	3	-	2	4	-	1	7	1	1	9	-
Scientific	4	1	-	4	2	-	1	2	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	6	3	1	4	4	1	6	7	-	2	16	-	5	4	-	6	4	-	2	5	1	6	4	3
None	2	3	-	7	2	1	7	5	-	5	16	-	2	2	-	5	3	-	-	8	5	1	7	6
Total	244	89	12	239	96	10	131	194	6	112	214	19	257	64	18	257	75	25	111	194	37	120	206	33

SUMMARY

In this chapter have been pointed out the factors contributing to the reliability of the vocational preferences of the pupils as statements of a genuine interest, and also certain evidence that establish approximately the degree to which an early interest persists in the child's thinking during the secondary school period.

The uncontrolled vocational choices were compared with group interests obtained by summarizing the replies to the question asking the pupils to name from an inventory list those work activities they preferred. Inaccuracies in the inventory minimized its value for measuring group interests. The figures for the permanency of the pupils' work interests showed it to be slightly less reliable than the vocational choice. The same general work interests were indicated as in the summary of vocational choices.

The naming of school subjects liked best revealed that pupils' interests changed less as they progressed through high school. There was a gradual development in educational interests toward History and Science and away from the vocational work in Home-making and Agriculture. This inventory was just as high in permanency as the vocational interests.

The inventory of types of recreation the boys and girls liked best to attend was handicapped in the same manner as the work interests. This list included only part of the recreational interests of rural boys and girls and at the same time included some they had never had the opportunity to experience. Athletics, Motion Pictures, and Music were predominant in their choices. Again, the pupils' preferences remained

about two-thirds permanent from one survey to the next and also became slightly more permanent during each succeeding year.

In comparing the pupils' vocational choice with his high school curriculum of the same year, it was found that 55.7 per cent of the girls and 60 per cent of the boys in the freshman year were enrolled in the curriculum best preparing them for the chosen vocation. These percentages raised in the senior year to 77.1 per cent of the boys and 82.3 per cent of the girls.

CHAPTER V

A Comparative Analysis of Eliminated Pupils

As was explained in the discussion of the methods used in this study, the 280 pupils for whom were obtained fairly complete records of their elimination from high school prior to the senior year have not formed a part of the analysis in Chapters II, III, and IV. To fail to consider eliminated pupils would invalidate the results as purporting to be a representative of the group interest development of ninth grade rural high school children. This chapter aims to briefly compare the 126 boys and 154 girls who dropped out of school with the interests and the factors influencing the interests of the 704 pupils graduated.

VOCATIONAL INTEREST DISTRIBUTION AND PERSISTENCY

The percentage of boys choosing each of the more popular vocations (Table XXIV) remained nearly the same even though the original total of 126 boys was rapidly diminished at successive survey periods. There were more Agriculture and Mechanical choices made by the eliminated boys, which it can be pointed out was also characteristic of the lowest ability quartile of graduated boys. Over half of the boys who failed to finish high school had intelligence quotients falling within the lowest 25 per cent of the ability classification.

The eliminated girls' vocational interests were much the same as the lowest intelligence fourth of the girls graduated in that more than the average chose Nursing, and less than the average selected

TABLE XXIV

Percentage Distribution of Vocational Choices of Eliminated Pupils

	Boys						Girls					
	S-29	M-30	S-30	M-31	S-31	M-32	S-29	M-30	S-30	M-31	S-31	M-32
Agriculture	28.6	32.2	29.6	31.8	20.0	-	-	-	-	-	-	-
Artists and Entertainers	.8	-	1.5	2.3	-	-	-	-	-	-	-	-
Aviation	15.1	11.5	19.2	11.4	12.0	12.5	1.3	-	1.1	-	3.2	15.4
Clerical	1.6	-	-	-	4.0	-	29.9	28.8	39.0	29.2	19.4	30.8
Domestic and Personal	-	-	-	-	-	-	2.6	3.2	2.2	-	6.5	15.4
Engineer	9.5	9.2	11.8	13.6	16.0	37.5	-	-	-	-	-	-
Lawyer	1.6	1.1	1.5	-	-	12.5	-	-	-	-	-	-
Mechanical	28.6	33.4	22.0	25.0	20.0	-	3.9	4.0	-	1.7	-	-
Music	.8	-	-	2.3	-	-	1.3	3.2	1.1	5.2	3.2	-
Nurse	-	-	-	-	-	-	33.1	28.0	34.4	31.0	29.0	30.8
Physical Education	2.4	2.3	2.9	2.3	8.0	12.5	-	-	1.1	1.7	3.2	-
Physician	.8	1.1	-	-	-	-	-	-	-	-	-	-
Public Service	2.4	-	-	2.3	-	-	-	-	-	-	-	-
Scientific	-	-	1.5	2.3	4.0	-	-	-	-	-	-	-
Teacher	-	3.5	1.5	4.5	8.0	12.5	18.2	18.4	16.7	20.7	12.9	7.8
Teacher, Vocational	1.6	2.3	-	-	-	-	2.0	4.8	-	1.7	9.7	-
Trade	2.4	2.3	2.9	2.3	-	-	2.6	4.0	3.3	1.7	-	-
Transportation and Communication	.8	1.1	1.5	-	-	12.5	2.0	1.6	-	-	3.2	-
Other Occupations	1.6	-	-	-	4.0	-	-	-	2.2	3.5	3.2	-
None	1.6	-	-	-	4.0	-	1.3	.8	-	3.5	3.2	-
Number of pupils	126	87	68	44	25	8	154	125	90	58	31	13

Teaching, but they differ in the markedly larger proportion preferring Clerical work.

The boys and girls in this group remaining at the surveys in May 1930, September 1930, and May 1931 exhibited no significant variation in total per cent permanency from the proportion of graduated pupils (Table V) who did not change their vocational choice from one period to the next. Agriculture chosen by boys and Clerical and Nursing preferences of girls, as with those who were not eliminated from school, consistently registered a higher per cent of permanency of vocational interests.

In age and intelligence rating, the eliminated pupils very closely correspond to the lowest 25 per cent of those graduated. The influence of persons, of experiences, and reasons given for the vocational choice were similar to the group just mentioned.

A comparison was made in Table XIV between the parents' occupation and eliminated pupils' last vocational choice before leaving school. No greater likeness was shown than for the graduated pupils. Only 28.6 per cent chose the same occupation as the male parent; which can be compared with 22.2 per cent of those graduated.

REASON FOR LEAVING AND EMPLOYMENT

The principals of the participating schools attempted to furnish information regarding the reason eliminated pupils quit school and their first employment. The tables show a large number for whom complete information was not given, but either the reason for leaving or the employment of each of the 280 was known.

TABLE XIV

Vocational Interest at Last Survey Before Leaving School
and Parents' Occupation

	Boys		Girls	
	Parent	Pupil	Parent	Pupil
Agriculture	51.6	30.2	42.2	-
Artists and Entertainers	-	3.2	-	2.0
Aviation	-	15.9	-	2.0
Clerical	-	-	-	27.9
Domestic and Personal	1.6	-	2.0	4.5
Engineer	-	11.1	-	-
Lawyer	-	.8	-	-
Mechanical and Mining	31.0	16.2	39.6	2.0
Music	-	1.6	-	2.6
Nurse	-	-	-	33.1
Physical Education	-	1.6	-	.7
Physician	-	.8	.7	-
Public Service	.8	1.6	2.6	-
Scientific	-	1.6	-	-
Teacher	-	1.6	-	15.0
Teacher, Vocational	-	.8	-	3.9
Trade	4.8	.8	3.9	2.6
Transportation and Communication	4.0	1.6	5.2	1.3
Other Occupations	-	.8	-	1.3
None	6.4	-	3.9	1.3
Total Number	126	126	154	154
Per cent choosing parents' occupation	-	28.6	-	0.0

Because they were needed to work or because of poor scholarship and lack of interest were the main reasons for boys dropping out (Table XXVI). The same reasons, plus marriage, accounted for the majority of eliminated girls.

TABLE XXVI

Eliminated Pupils' Reasons for Leaving School

Reason	Number of Boys	Number of Girls
To be married	2	23
Needed at home	11	16
To work	30	16
Poor scholarship	23	13
Lack of interest	18	18
Reached legal age limit	5	6
Lack of transportation	2	8
Ill health	3	9
At parents' insistence	2	-
None given	30	43
Total	126	154

Table XXVII indicates that the work engaged in by the boys who were eliminated between September 1929 and May 1932 was chiefly employment on the home farm. Most of the girls were at home, doing house work away from home, or were married and maintaining their own home. Most of those for whom no employment was known probably did not have jobs.

TABLE XIVII
Eliminated Pupils' First Employment

Employment	Number of Boys	Number of Girls
Farming	57	-
Mechanical work	18	13
Driving truck	4	-
Work in a store	3	3
Restaurant or housework	3	13
Working at home	-	37
Housewife	-	23
Golf caddy	2	-
Night school	-	1
Army	1	-
Loafing	3	-
Not given	35	58
Working (?)	-	6
Total	126	154

SUMMARY

The eliminated pupils were very similar in ability and interests to the lowest 25 per cent of those graduated. No indication could be gained from the interest preferences that would point toward probable elimination before graduation. The tendencies of an older age and a lower intelligence rating to prestage elimination from school were operating among this group.

CHAPTER VI

Summary

The analysis of the four-year interest histories of the group of rural high school pupils in Pennsylvania, which have been studied in preceding chapters, has supplied certain facts and tendencies of use to teachers and supervisors of rural secondary schools. This summary of the nature and development of the vocational interests of pupils attending high schools where vocational agriculture and home-making instruction is offered, when compared with other vocational interest studies, will indicate the significant interest differences possessed by rural children.

While only two out of three boys or girls did not change their vocational preference during any school year or summer vacation, yet the proportion choosing each of the occupations attracting these pupils remained nearly constant throughout the four years. From the ninth to twelfth grade only 37.4 per cent of the boys and 39 per cent of the girls retained their original vocational interest.

Approximately two-thirds of the boys' vocational choices at any survey period were included in the four vocational groups - Agriculture, Aviation, Mechanical work, and Engineering. About the same proportion of girls selected Clerical work, Nursing, or Teaching. A noticeable decrease was found in the number of boys choosing Aviation and of girls choosing Teaching in the senior year.

The boys in the highest quartile of intelligence made more vocational choices in Scientific work, Engineering, Other Occupations, and Teaching than the below average group, who most frequently chose

Mechanical work or Agriculture. The girls of superior ability made a larger proportion of Teaching choices. The lowest quartile of girls predominantly selected Nursing.

Slightly more than two was the average number of different vocations chosen during the seven survey periods. Boys choosing Agriculture and Aviation, and girls preferring Clerical, Nursing, or Teaching, were more likely to have made an early permanent choice.

Between 25 and 30 per cent of the pupils recognized the influence of some person in their vocational choice at each survey. Friends and Relatives, other than parents, were most frequently mentioned. Fathers influenced one-fourth of the boys naming a person who aided them and Mothers similarly influenced one-fifth of the girls.

About 40 per cent of the boys and nearly 30 per cent of the girls were consciously influenced by an experience, which was in most cases the doing of work or play related to the vocation.

From a half to three-fourths gave as a reason for their vocational preference that it was an enjoyable kind of work, or that it was interesting.

Summer vacation employment had no appreciable effect on boys' vocational interests in September and only influenced half of the 10 per cent of girls who worked away from home.

Less than one-fourth of the boys chose their father's occupation. Only with Agriculture and Mechanical work were there larger than average percentages of boys choosing the parents' occupations. There was no relation between the father's occupation and girls' vocational preferences.

The inventories of Work, Educational, and Recreational interests from the lists the pupils used to indicate their preferences showed that these interests were no more permanent than the vocational choice. The work activities corresponded closely to the distribution of vocational interests.

In ninth grade, the boys and girls preferred the vocational subjects - Agriculture, Farm Shop, Sewing, and Cooking - but during the four years their interests shifted towards History and Science.

Athletics, Motion Pictures, and Music were the preferred types of recreation both by boys and girls.

By classifying the vocations according to the high school curriculum best preparing for that work, it was learned that 55.7 per cent of the girls and 60.0 per cent of the boys were correctly placed in the freshman year. Those percentages rose in the senior year to 77.1 per cent of the boys and 82.3 per cent of the girls.

From a comparative study of 280 pupils who were eliminated from school before the twelfth grade the summary statement may be made that their interests were very similar to the lowest quartile of those graduated.

CHAPTER VII

Conclusions

The following conclusions, each weighed in its proper relation to the whole problem of guiding and preparing boys and girls for their work after the completion of secondary school training, may be drawn with an assurance that their knowledge will be of assistance to those to whom are entrusted the counselling and guidance responsibilities in rural high schools. The information also is a contribution to the work of the teacher of the Vocational Civics or Occupations course now taught quite generally in the ninth grade.

1. The expression of a vocational interest by a boy or girl should be considered as only one of the factors in the determination of the occupation in which success is most likely to be achieved.
2. The permanency of vocational interests of rural secondary school children is as high as found in this study chiefly because, as the individual interest histories reveal, each pupil's interests go through a genetic development within a relatively narrow range of vocations.
3. Individual interest histories, compiled at regular intervals during school training, are valuable because they show trends in interests and bring to attention underlying tendencies, aspirations, and limiting factors that one conference or interest questionnaire cannot define.

4. Rural boys are predominantly interested in vocations which require a major emphasis on physical activity; as indicated by Agriculture, Aviation, Mechanical occupations, and Engineering being their group preferences.

5. An unusually large proportion of rural-reared girls are interested in Nursing as a vocation. Teaching is a major interest but Clerical work is not as much an interest as it is of girls in urban environments.

6. There is a tendency for pupils with superior intelligence to choose the professions, and for children below average in native ability to prefer mechanical vocations.

7. The opportunity to experience the essential elements of a vocation is the most important influencing factor in the development of a vocational interest.

8. In general, pupils of high school age do not have clearly formed, valid reasons for their vocational preference. More accurate occupational information is needed.

9. The majority of eliminated pupils, who enter unskilled mechanical and personal service vocations, had while still in school expressed that type of interest.

APPENDIX

THE PENNSYLVANIA STATE COLLEGE
School of Agriculture and Experiment Station
State College, Pa.

Department of Rural
Education

August 13, 1929

Mr.

My dear Mr.

We are undertaking a study to determine the permanence and significance of the vocational interests of pupils attending Pennsylvania rural community high schools. Will your school cooperate with us in the problem?

Our plan is to ask for certain vocational interest information from all incoming ninth graders this fall and to follow this same class throughout its four years in high school, checking twice each year on changes in their vocational interests. We shall supply, without cost, the forms for gathering these data.

A general intelligence test will be required for all freshmen entering this fall. Many schools already follow this practice. We shall try to select the test which is now used by the largest number of schools cooperating. If it happens that the best selected is one which you do not intend to use, same will be supplied without cost.

It is hoped that a good number of schools will become a part of this study. The study will be made under the direction of Professor C. S. Anderson. A form for your reply and a return envelope are inclosed for your convenience.

Yours very truly,

H. G. Parkinson
Professor of Agricultural Education

VOCATIONAL INTERESTS STUDY

Name _____ Boy or Girl. Date _____
 (Last) (First) (Underline)
 School _____ Father's occupation _____

I. Underline the course you are taking in high school:

Agriculture. Home-making. Academic. Commercial.

II. Vocational preference.

1. What one occupation would you most of all like to go into when you leave school?

Answer _____

2. Did some person influence you in this choice? _____

If so, who? _____

3. Did some experience influence you in this choice? _____

If so, what? _____

4. Why do you want to go into this line of work? Give your main reason. Answer _____

III. Recreational interests.

Which of the following kinds of entertainment would you prefer to attend? (Mark "1" before your first choice, "2" before your second, and "3" before your third.)

_____ Automobile races
 _____ Automobile shows
 _____ Ball game
 _____ Band concert
 _____ Boxing match
 _____ Circus
 _____ Fair
 _____ Track meet

_____ Grand opera
 _____ Illustrated lecture
 _____ Movie (silent)
 _____ Movie (talkies)
 _____ Musical comedy
 _____ Political speech
 _____ Radio program

VOCATIONAL INTERESTS STUDY (Continued)

IV. Work interests.

Read through the following list of kinds of activities carefully. Select the three kinds of work at which you think you would do best, and at which you think you would be contented to work permanently. Place the figure "1" before the group which you would place first for yourself; place "2" before your second choice; and "3" before your third choice.

Activities

- _____ Growing plants, as in farming, etc.
- _____ Care of animals, as in stock raising, etc.
- _____ Operating engines, as locomotives, etc.
- _____ Operating machines, as in manufacturing, etc.
- _____ Installing equipment, as electrician, etc.
- _____ Construction work, as in building, etc.
- _____ Delicate muscular movements, as dentist, etc.
- _____ Discovering and repairing defects, as jeweler, etc.
- _____ Transporting activities, as railroad operation, etc.
- _____ Meeting and directing people, as secretary, etc.
- _____ Teaching, as in school, shop, etc.
- _____ Welfare work, as in social settlements, etc.
- _____ Advisory services, as physician, lawyer, etc.
- _____ Organizing people, as in societies, work gangs, etc.
- _____ Influencing people directly, selling, preaching, etc.
- _____ Influencing people indirectly, as newspaper work, etc.
- _____ Organized planning, as in business, etc.
- _____ Scientific work, as in laboratories, etc.
- _____ Recording and systematizing records, as in office work, etc.
- _____ Entertaining people, as musician, actor, etc.
- _____ Artistic skill, as in decorating, millinery, etc.
- _____ Artistic creation, as in writing, designing, etc.
- _____ Physical education.
- _____ Nursing.
- _____ Home-making.
- _____ Field of activity not in this list and described as follows:

VOCATIONAL INTERESTS STUDY (Continued)

V. School subjects I like best.

Which of the following school subjects have most interested you? (Mark "1" on the line before the most interesting subject; "2" before the next; and "3" before the third most interesting.)

_____	Agriculture
_____	Arithmetic
_____	Cooking
_____	Civics
_____	Classical language
_____	Drawing
_____	English
_____	Farm shop
_____	Geography
_____	History
_____	Modern language
_____	Music
_____	Penmanship
_____	Science
_____	Sewing

(A typical case history)
VOCATIONAL INTEREST STUDY

66

Name *Eungard, Kenneth* Age *14* Years *4* Months
M. I. Q. *111* School *Spring Mills*
Father's occupation *Farming*

Course 1929-30 *Voc. Agr.* 1930-31 *Voc. Agr.* 1931-32 *Voc. Agr.* 1932-33 *Voc. Agr.*
VOCATIONAL PREFERENCES

1929-30	1930-31	1931-32	1932-33
<i>Selling farm machinery</i> <i>Mechanic</i>	S. <i>Mechanic</i> M. <i>Mechanic</i>	S. <i>Mechanic</i> M. <i>Farming</i>	S. M. <i>Farming</i>

INFLUENCE OF PERSONS

1929-30	1930-31	1931-32	1932-33
Yes No <input checked="" type="checkbox"/>	S. Yes No <input checked="" type="checkbox"/>	S. Yes No <input checked="" type="checkbox"/>	S. Yes No
Yes No <input checked="" type="checkbox"/>	M. Yes No <input checked="" type="checkbox"/>	M. Yes No <input checked="" type="checkbox"/>	M. Yes No <input checked="" type="checkbox"/>

INFLUENCE OF EXPERIENCES

1929-30	1930-31	1931-32	1932-33
Yes <input checked="" type="checkbox"/> No <i>Helping father</i> <i>with implements</i>	S. Yes <input checked="" type="checkbox"/> No <i>Working</i> <i>with machinery</i> M. Yes <input checked="" type="checkbox"/> No <i>Working</i> <i>with machinery</i>	S. Yes <input checked="" type="checkbox"/> No <i>Working</i> <i>around machinery</i> M. Yes <input checked="" type="checkbox"/> No <i>Working on farm</i>	S. Yes No <i>Work on a farm</i> M. Yes <input checked="" type="checkbox"/> No

REASONS FOR VOCATIONAL PREFERENCES

1929-30	1930-31
<i>To be able to help</i> <i>farmers</i>	S. <i>I like this trade: it</i> <i>pays well.</i>
<i>I prefer this to any</i> <i>other trade</i>	M. <i>I prefer this to any</i> <i>other trade</i>
1931-32	1932-33
<i>This work appeals</i> <i>most to me.</i>	S.
<i>I like this work best.</i>	M. <i>I enjoy this work.</i>

S, September; M, May.

TIGHT BINDING

WORK DURING SUMMER VACATIONS

1929	1930	1931	1932
<i>Farmwork</i>	<i>Farmwork</i>	<i>Farmwork</i>	<i>Farmwork</i>

RECREATIONAL INTERESTS*

1929-30	1930-31	1931-32	1932-33
S. <i>7 3 12</i>	S. <i>7 3 6</i>	S. <i>7 5 8</i>	S.
M. <i>7 3 2</i>	M. <i>10 7 2</i>	M. <i>7 3 6</i>	M. <i>7 2</i>

WORK ACTIVITY INTERESTS *

1929-30	1930-31	1931-32	1932-33
S. <i>Salesman 4 6</i>	S. <i>Mechanic 5 2</i>	S. <i>3 4 1</i>	S.
M. <i>3 2 9</i>	M. <i>1 5 6</i>	M. <i>3 1 5</i>	M. <i>1 3</i>

SCHOOL SUBJECT INTERESTS*

1929-30	1930-31	1931-32	1932-33
S. <i>8 1 4</i>	S. <i>1 8 10</i>	S. <i>8 1 12</i>	S.
M. <i>1 8 4</i>	M. <i>8 1 9</i>	M. <i>8 1 12</i>	M. <i>1 10</i>

OUT OF SCHOOL **

Date of leaving _____ Grade attained _____

Reason for leaving _____

Employment _____

* The numbers used here refer to the items as they appeared in order on the questionnaire form under each division.

** This division completed for only those eliminated before the twelfth grade.

List of Schools Cooperating in This Study with the Number of Pupil Records from Each

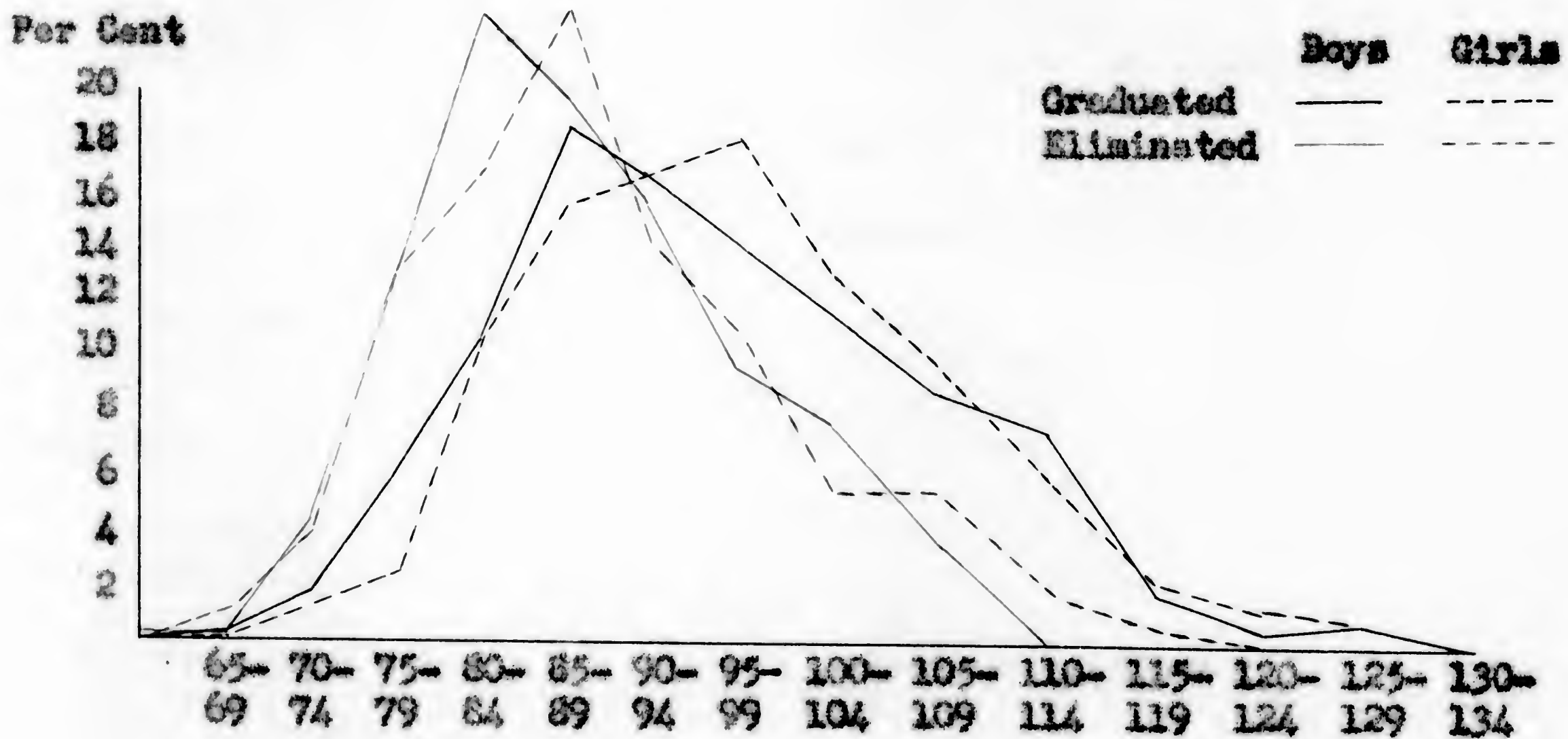
School	Pupils Graduated		Eliminated Pupils	
	Boys	Girls	Boys	Girls
*Arendtsville	7	7	1	5
*Belleville	3	6	3	1
*Benton	13	15	5	4
Boiling Springs	14	10	1	4
*Brooklyn	5	6	2	1
Cambridge Springs	14	8	6	3
*Conneautville	13	12	-	4
*Cochranville	5	11	1	3
*Cornica	10	10	8	6
Coudersport	17	21	8	9
*Darlington	3	6	1	3
*Dayton	15	23	2	9
*Dinock	2	3	1	3
Edinboro	15	9	5	3
*Elders Ridge	9	5	5	7
*Falls Creek	8	6	2	2
*Fredonia	17	19	4	3
Hatfield	3	5	9	8
*Hickory	9	13	4	9
*Honey Brook	11	4	5	6
*Imperial	12	14	3	1
*Lake Ariel	11	15	8	8
*Liberty	6	7	2	3
*Loganton	5	4	1	1
*Martinsburg	27	18	6	4
*Mill City	5	2	4	7
*Petersburg	11	16	1	3
*Picture Rocks	1	10	4	4
*Pleasant Mount	6	11	2	1
Slippery Rock	16	7	4	6
*Spring Hills	5	4	2	1
*Ulysses	5	7	1	3
Watson town	19	21	6	9
*West Lampeter	5	11	3	3
*Waterford	8	8	1	4
*West Sunbury	10	5	5	3
Total	345	359	126	154

* Rural Community Vocational Schools.

Distribution of Intelligence Test Scores

I. Q. Score	Pupils Graduated		Eliminated Pupils	
	Boys	Girls	Boys	Girls
60 - 64	-	-	1	-
65 - 69	2	1	1	2
70 - 74	7	5	6	7
75 - 79	22	10	16	20
80 - 84	37	38	30	26
85 - 89	64	56	25	37
90 - 94	58	61	20	22
95 - 99	50	66	12	17
100 - 104	35	49	10	9
105 - 109	31	35	5	9
110 - 114	27	22	-	3
115 - 119	7	8	-	2
120 - 124	2	5	-	-
125 - 129	3	3	1	-
Total	345	399	126	154

Intelligence Quotient Distribution



**The Occupational Classification of the Specific Vocational
Choices Made by the Pupils Comprising This Study**

AGRICULTURE

Agriculture
Animal husbandman
Cattlemen
Dairying
Florist
Fur trapper
Farming
Landscape gardener
Rabbit industry
Swine industry
Poultryman

ARTISTS AND ENTERTAINERS

Art
Acting
Dancing
Painting
Cartoonist
Interior decorator
Sign painting
Elocution

AVIATION

Aviator
Pilot
Mail pilot
Aviation

CLERICAL

Accountancy
Bookkeeping
Stenography
Office work
Secretary
Private secretary

DOMESTIC AND PERSONAL

Home-making
Home economics
Home improvement
Hotel hostess
Waitress
Housework
Cook
Barber
Cosmetician
Hair dresser
Beauty culture
Dietetics
Comptometer

ENGINEER

Electrical engineer
Mechanical engineer
Aeronautical engineer
Chemical engineer
Architecture
Landscape architecture

LAWYER**MECHANICAL INDUSTRIES**

Baking
Brick layer
Carpenter
Draftsman
Contractor
Electrician
Factory worker
Garageman
Machine operator
Mechanic
Machinist

MECHANICAL INDUSTRIES (Continued)

Aviation mechanic
 Mechanical drawing
 Manufacturer
 Painter
 Paper hanger
 Plumber
 Printer
 Pattern maker
 Mill worker
 Radio work
 Milk tester
 Surveyor
 Jeweler
 Tile setter
 Shop work
 Laborer
 Seamstress
 Sewing
 Designing
 Silk mill work

MUSIC

Music
 Music teacher
 Supervise public school music
 Musical career
 Play in orchestra
 Vocal music

NURSE

Child care
 Dental hygiene
 Nursing

PHYSICAL EDUCATION

Health education teacher
 Physical education director
 or teacher
 Coaching
 Boxing
 Baseball
 Wrestling

PHYSICIAN

Child's physician

PHYSICIAN (Continued)

Surgery
 Doctor
 Physician

PUBLIC SERVICE

Army
 Navy
 Mail carrier
 Civil service
 Government work
 Policeman
 Patrolman

SCIENTIFIC

Chemistry
 Scientist
 Research
 Naturalist
 Astronomy
 Botany
 Science

TEACHER

Teach mathematics
 Teach english
 Teach history
 Teach science
 Principal
 Primary teacher
 Kindergarten

TEACHER, VOCATIONAL

Vocational agricultural teacher
 Home-making teacher
 Shop work teacher
 Sewing teacher
 Foods' teacher

TRADE

Advertising
 Banking
 Business
 Clerk
 Merchant
 Salesman

TRANSPORTATION AND COMMUNICATION

Railroad work
Truck driver
Navigator
Sailor
Radio announcer
Radio operator
Telephone operator
Telegraph operator

OTHER OCCUPATIONS

Ministry
Missionary
Evangelist
Writing
College
Librarian
County agent
Veterinarian
Dentist
Welfare worker
Y. W. C. A. secretary
Pharmacy
Literary science

NONE

None
Undecided
Anything

Distribution of Boys' Vocational Choices

	6-III						
	S-29	M-30	S-30	M-31	S-31	M-32	D-32
Agriculture	14	19	18	18	17	16	17
Aviation	12	5	10	7	8	9	5
Clerical	2	2	2	1	1	2	2
Domestic and Personal	2	2	2	-	-	-	-
Public Service	2	-	-	1	-	-	1
Trade	5	3	2	3	3	4	4
Transportation and Communication	1	3	1	2	3	1	-
Mechanical	12	11	16	11	11	7	13
Engineer	13	11	9	10	17	14	10
Artists and Entertainers	2	3	-	1	1	1	1
Lawyer	-	-	-	1	-	-	-
Physician	-	-	-	1	1	-	1
Teacher	4	5	7	8	6	3	6
Music	2	1	-	2	2	3	-
Vocational Teacher	2	-	1	1	-	3	4
Physical Education	2	4	3	1	1	1	3
Scientific	1	3	4	4	3	1	2
Other	2	3	3	1	3	4	5
None	2	2	2	2	-	3	6
Total	80	77	80	75	77	72	80

Distribution of Boys' Vocational Choices

	Q-II						
	S-29	M-30	S-30	M-31	S-31	M-32	D-32
Agriculture	36	34	30	32	33	31	33
Aviation	25	25	28	26	29	26	22
Clerical	6	2	2	2	2	1	1
Domestic and Personal	-	-	2	-	-	-	-
Public Service	5	2	5	6	5	8	8
Trade	6	9	7	5	8	6	7
Transportation and Communication	4	2	2	1	1	3	2
Mechanical	43	44	40	35	31	32	37
Engineer	21	23	24	21	22	14	21
Artists and Entertainers	3	2	2	1	2	1	3
Lawyer	6	3	4	2	2	3	6
Physician	5	5	5	3	4	3	2
Teacher	7	7	11	7	10	11	5
Music	1	3	4	6	3	3	3
Vocational Teacher	-	3	-	3	2	2	2
Physical Education	1	2	2	3	5	3	4
Scientific	3	2	2	2	-	5	3
Other	6	5	5	7	7	6	10
None	2	2	5	6	7	9	11
Total	180	175	180	168	173	167	180

Distribution of Boys' Vocational Choices

	Q-I						
	S-29	W-30	S-30	M-31	S-31	M-32	D-32
Agriculture	18	19	19	24	14	15	21
Aviation	11	10	10	8	10	13	7
Clerical	1	-	2	1	2	2	2
Domestic and Personal	1	1	2	1	1	1	1
Public Service	3	1	2	-	1	3	2
Trade	5	2	4	6	1	1	1
Transportation and Communication	-	-	1	-	-	2	4
Mechanical	23	27	19	24	26	23	24
Engineer	8	11	13	9	10	6	7
Artists and Entertainers	1	1	2	1	1	1	-
Lawyer	3	2	1	-	1	1	-
Physician	-	-	1	-	-	-	1
Teacher	1	1	1	1	1	2	3
Music	2	-	1	1	1	1	1
Teacher, Vocational	2	2	2	1	2	2	1
Physical Education	2	2	1	1	2	3	3
Scientific	1	-	-	-	-	1	-
Other	2	1	1	1	3	1	3
None	1	2	3	1	5	3	4
Total	85	82	85	80	81	81	85

Distribution of Girls' Vocational Choices

	Q-III						
	S-29	M-30	S-30	M-31	S-31	M-32	D-32
Agriculture	-	-	-	-	-	-	-
Aviation	1	1	-	-	-	1	2
Clerical	22	20	18	18	17	18	17
Domestic and Personal	-	-	1	1	2	1	1
Public Service	1	-	-	-	1	-	-
Trade	2	-	-	-	1	-	2
Transportation and Communication	-	-	-	-	-	-	-
Mechanical	2	1	4	2	-	3	1
Engineer	-	-	-	-	-	-	-
Artists and Entertainers	1	4	3	-	2	2	2
Lawyer	1	1	-	1	-	-	-
Physician	1	2	1	1	1	2	2
Nurse	14	16	20	14	16	18	17
Teacher	31	27	25	26	29	24	30
Music	10	8	7	9	6	4	5
Teacher, Vocational	1	4	3	5	4	2	2
Physical Education	-	1	1	3	3	-	2
Scientific	-	1	-	-	-	-	-
Other	2	2	4	3	3	6	4
None	2	2	3	3	4	4	4
Total	91	90	90	86	89	85	91

Distribution of Girls' Vocational Choices

	G-II						
	S-29	M-30	S-30	M-31	S-31	M-32	D-32
Agriculture	-	-	-	-	-	-	-
Aviation	3	4	2	1	2	1	1
Clerical	38	39	32	36	25	25	30
Domestic and Personal	2	4	11	8	8	12	18
Public Service	-	-	-	-	-	-	-
Trade	4	1	2	2	3	4	3
Transportation and Communication	1	1	-	-	-	-	-
Mechanical	-	4	2	5	8	5	4
Engineer	-	-	-	-	-	-	-
Artists and Entertainers	5	5	6	5	2	8	6
Lawyer	-	-	-	-	-	-	-
Physician	-	-	-	1	-	-	-
Nurse	36	45	52	51	56	60	54
Teacher	58	50	52	36	44	36	37
Music	12	15	12	11	8	13	13
Teacher, Vocational	6	7	9	8	9	8	5
Physical Education	2	3	3	6	5	6	6
Scientific	-	-	-	-	-	-	-
Other	4	3	4	5	4	4	6
None	2	2	5	9	9	8	10
Total	193	183	192	184	183	190	193

Distribution of Girls' Vocational Choices

	Q-I						
	S-29	M-30	S-30	M-31	S-31	M-32	D-32
Agriculture	-	1	-	-	-	-	-
Aviation	-	-	-	-	-	-	-
Clerical	16	14	17	17	16	14	15
Domestic and Personal	2	-	-	1	1	7	9
Public Service	-	-	-	-	-	-	-
Trade	-	3	1	1	3	2	2
Transportation and Communication	-	-	1	-	-	-	-
Mechanical	4	4	4	4	1	2	1
Engineer	-	-	-	-	-	-	-
Artists and Entertainers	3	2	3	2	2	3	4
Lawyer	-	-	-	-	-	-	-
Physician	-	-	-	-	-	-	-
Nurse	26	25	31	23	30	26	28
Teacher	16	13	10	8	8	8	7
Music	1	1	2	3	3	3	2
Teacher, Vocational	2	1	2	3	4	1	2
Physical Education	2	3	2	2	1	2	2
Scientific	-	-	-	-	-	-	-
Other	3	1	2	2	1	2	3
None	-	-	-	2	-	1	-
Total	75	71	75	68	70	71	75

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**End of
Title**